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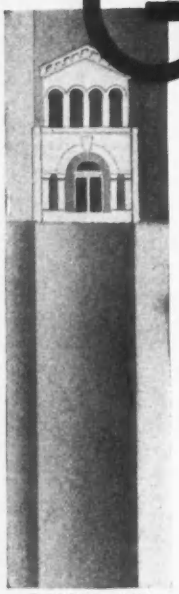

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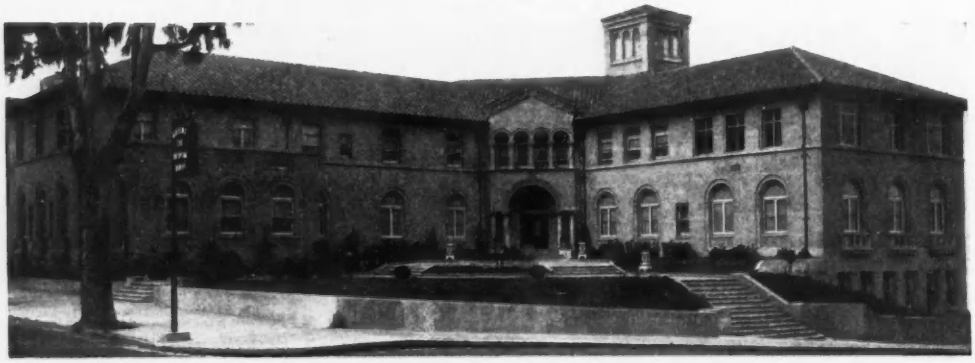

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*Address communications to the Superintendent*

CALIFORNIA
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WESTERN MEDICINE

VOLUME XXXV DECEMBER, 1931 No. 6

# OBSERVATIONS ON BACILLUS TYPHOSUS IN ITS FILTERABLE STATE*

## A PRELIMINARY COMMUNICATION

*By* ARTHUR ISAAC KENDALL, PH.D.
*Chicago, Illinois*
AND
ROYAL RAYMOND RIFE, PH.D.
*San Diego, California*

IT seems improbable that viable bacteria in the filterable state have ever been unequivocally seen. Nevertheless, the theoretical and practical importance of filterable forms of bacteria in theoretical and applied biology cannot be denied.

Recently, through the simultaneous availability of the Rife microscope, an instrument combining very high magnification with coördinated resolving power, and a simple procedure for inducing the filterable state in bacteria at will,[1] the possibility of actually demonstrating organisms in this hitherto illusive condition very obviously presented itself.

Two features of the Rife microscope, full details of which will be presented elsewhere, must be specifically mentioned here. First, the entire optical system, including not only the lenses but also the illuminating unit, is made of quartz. In addition, a double wedge quartz prism is mounted between the illuminating unit and the quartz Abbé condenser. The latter can be rotated, with vernier control, through 360 degrees, thereby affording readily controllable polarized light at any required angle. The import of this polarization unit will be discussed later. Inasmuch as this microscope magnifies from 5,000 to 17,000 diameters, it is obviously very necessary to have it mounted upon an immovable foundation.

* * *

The organism selected for these experiments was the well known Rawlings strain of *B. typhosus*. The immediate history of the culture used is as follows:

October 29, 1931. An agar slant was made of a thrice-plated culture of *B. typhosus*, Rawlings strain. (Editor's Note: This agar slant was made in the Laboratory of Research Bacteriology, Northwestern University Medical School, Chicago, Illinois.)

November 2, 4 p. m. Inoculated six cubic centimeters of K (protein) Medium [2] from the agar slant culture.

November 3, 10 a. m. Filtered this culture in K Medium of November 2, through a Berkefeld "N" filter. (The culture was diluted with four volumes of sterile physiological saline solution; the vacuum used was less than four inches of water; the total time of filtration was less than ten minutes.)

November 3. One drop of filtrate, representing one-fifth drop of the original culture, was introduced into six cubic centimeters of K Medium. Incubated at 37 degrees centigrade. The filtrate was also tested for purity as follows: (1) cultural reactions; (2) sugar fermentation reactions; (3) agglutination with specific typhoid serum. All were typical.

November 5. The forty-eight-hour culture of November 3 in K Medium was filtered, as above, through a Berkefeld "N" filter. One drop of the filtrate was added to six cubic centimeters of K Medium and incubated at 37 degrees centigrade.

November 6. The twenty-four-hour culture of November 5, which grew well, was again filtered. This time the finest Berkefeld filter, "W," was used. As before, a drop of this filtrate was added to six cubic centimeters of K Medium and incubated at 37 degrees centigrade. Growth was abundant November 7.

November 9. The culture was again transferred to K Medium.

November 12. Still another culture was made, in every instance using three loops of culture for the inoculum.

It is worthy of note that this thrice filtered culture of *B. typhosus* grew quite readily in K Medium as above outlined: after the second filtration it failed to grow in peptone broth. In other words, the organism having become filterable and accustomed to protein media (proteophilic) lost its ability to grow in ordinary peptone containing nutrient broth.

The cultures of November 9 and November 12 were examined under the microscope and there were no discernible bacilli, although the cultures were markedly turbid. Darkfield illumination revealed very small, actively motile granules, and direct observation of these with the oil emersion lens confirmed the presence of these motile granules, without, however, affording any indica-

* From:
The Rife Research Laboratory, San Diego, California;
The Laboratory of Research Bacteriology, Northwestern University Medical School, Chicago, Illinois; and
The Pathological Laboratory of the Pasadena Hospital, Pasadena, California.

* Presented at a meeting of the Bacteriological Section of the Los Angeles Clinical and Pathological Society, November 20, 1931.

Fig. 1.—Photograph of the microscope and its inventor, Royal Raymond Rife, Ph. D. In the illustration the source of illumination is to the extreme left, the light passing through the substation condenser and then through the optical system. The vertical tube is the observation tube. The three lenses are directed toward the camera. The camera is a special stop motion camera for standard films. Beyond the camera is the motor to drive it. The stage on which the instrument is placed is so arranged that the microscope can be tilted through any axis from horizontal to vertical.

tion of their structure. Therefore, these granules for obvious reasons could not be unequivocally diagnosed as the filterable form of the bacillus.

* * *

In this viable, filtered state the culture was taken to Pasadena, California, and, through the instrumentality of Dr. Milbank Johnson, the cooperation of Dr. Alvin G. Foord, and the courtesy of the Pasadena Hospital, the necessary space and equipment for mounting the microscope and continuing the cultures were made available. The subsequent developments, which are the immediate subject of this discussion, are as follows:

November 16. The cultures of November 12, made in Chicago, were transferred to fresh K Medium and incubated at 37 degrees centigrade overnight.

November 17. The Rife microscope was installed and the first cultures, those inoculated November 16, were examined. The preliminary observations of these cultures were made with a polarizing microscope with a spectroscopic attachment. It should be borne in mind that the entire optical system of this micropolarimeter was of quartz. A one-eighteenth-inch apochromatic oil immersion lens was used, with a 20x quartz ocular.

When a culture of *B. typhosus* in the filterable state, grown as above indicated in K Medium, was examined with this micropolarimeter, it was observed that the plane of polarization of the light passing through the culture was deviated plus 4.8 degrees, with the simultaneous appearance of a definite blue spectrum. With this observation in mind, the culture was next studied with the Rife microscope at 5000 diameters.

The double wedge quartz prism referred to above was set by means of the vernier to minus 4.8 degrees.* Examined in this polarized light, this thrice filtered culture of *B. typhosus* cultivated in K (protein) Medium showed small, oval granules, many of them quite actively motile. These motile granules when in *true focus* appeared as bright turquoise-blue bodies, which contrast strikingly, both in color and in their active motion, with the noncolored, nonmotile débris of the medium.

* * *

These observations were repeated eight times, using in each instance growth of the filterable organisms in K Medium. The cultures examined were both twenty-four and forty-eight hours old. The qualitative results were always the same, namely, the occurrence of small, oval, actively motile, turquoise-blue bodies in the cultures and the absence of these small, oval, actively motile,

* The reason for setting the quartz wedge in the reverse direction will be discussed in another place.

Fig. 2.—Arthur Isaac Kendall, Ph. D., Director of Medical Research, Northwestern University Medical School, co-author with Royal Raymond Rife, Ph. D., of the paper on "Observations on Bacillus Typhosus in Its Filterable State."

turquoise-blue bodies in the uninoculated control K Media.

From the two facts thus far arrived at, namely, that the small, oval, turquoise-blue bodies were actively motile and also that they were cultivable from K Medium to K Medium, it is surmised that these small, oval, motile, turquoise-blue bodies are indeed the filterable forms of the *B. typhosus.*

* * *

There is another even more direct procedure for establishing the identity of these small, oval, motile, turquoise-blue bodies. It has been shown in previous communications [3] that agar cultures, or better, broth cultures of *B. typhosus* inoculated into K Medium, become filterable within eighteen hours' growth at 37 degrees centigrade. It should follow, inasmuch as not all of the bacilli appear to become filterable under these conditions, that at least some of the bacilli should have similar turquoise-blue granules within their substance if they are indeed passing to the filterable state. Also the free swimming filterable forms, the small, oval, motile, turquoise-blue bodies described above, should be simultaneously present.

Darkfield examination of such a culture eighteen hours old revealed unchanged, actively motile bacilli, bacilli with granules within their substance, and free swimming, actively motile granules. This culture examined in the Rife microscope with the quartz prism set at minus 4.8 degrees and with 5000 diameters magnification, showed very clearly the three types of organisms just described, namely:

First, unchanged bacilli: These were relatively long, actively motile, and almost devoid of color.

Second, long, actively motile bacilli, each with a rather prominent granule at one end. The granule in such an organism was turquoise blue, reminiscent in size, shape, and color of the small, oval, actively motile, turquoise-blue granules found in the protein medium (K Medium) where, it will be recalled, no formed (rod shaped) bacteria could be demonstrated. These bacilli having the turquoise-blue granules were colored only at the granule end, the remainder of the rod being nearly colorless, in this respect corresponding to the unchanged (nonfilterable) bacilli just mentioned.

Third, free swimming, small, oval, actively motile, turquoise-blue granules, precisely similar, apparently, in size, shape, and color to those seen in the granulated bacilli just described.

* * *

From the fact that these small, oval, turquoise-blue bodies could be seen both in the parent rod and free swimming in the medium, it is assumed that these small, oval, actively motile, turquoise-blue bodies are indeed the filterable form of *B. typhosus.*

Laboratory of Medical Research, Northwestern University Medical School, 303 Chicago Avenue, Chicago, Illinois.

Rife Research Laboratory, 712 Electric Building, San Diego.

REFERENCES

1. James A. Patten Lecture, Northwestern University Bulletin, Vol. 32, No. 5 (September 28), 1931.

2. Northwestern University Medical School Bulletin, Vol. 32, No. 8, (October 19), 1931, for full details.

3. Op. cit.

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# TESTICULAR SUBSTANCE IMPLANTATION*

## COMMENTS ON SOME SIX THOUSAND IMPLANTATIONS

*By* LEO L. STANLEY, M. D.
*San Quentin*

DISCUSSION *by Jau Don Ball, M. D., San Francisco; Ralph A. Reynolds, M. D., San Francisco; H. Lisser, M. D., San Francisco.*

RESEARCH relative to the transplantation of testes and implantation of testicular substance was begun at the California State Prison at San Quentin in 1918. It is now twelve years since this work was started. Approximately four thousand persons have been observed and have had administered to them some form of a gonadal product. It is now time to check up and evaluate, if possible, the results.

### BROWN-SEQUARD'S OBSERVATIONS

Brown-Sequard, the father of endocrinology, in 1890 published the results obtained by injecting into himself an extract made by grinding in a mortar with water, and filtering, the testes of

* Read before the General Medicine Section of the California Medical Association at the sixtieth annual session at San Francisco, April 27-30, 1931.

a young, vigorous dog. He claimed definite dynamic effects. At that time he was seventy-two years old and had many infirmities of old age: feebleness, rheumatism, decreased vigor, constipation, exhaustion, and inability to sleep. Following five injections of the extract he noticed that he tired less easily, regained much of his former strength, felt better physically, and was more alert mentally. "I can say, also, that my other forces—not lost, but decreased—have been remarkably strengthened."

After the publication of Brown-Sequard's findings, many physicians took up the procedure, but with them arose many charlatans and irregular practitioners. These latter played on the sex phase and made ridiculous claims. As a result, the better class of medical men were not impressed, and the matter lay semidormant until about 1912.

### LYDSTON'S EXPERIMENTS

At this time Lydston conceived the idea of transplanting the testes. He chose himself to be the recipient. He procured the organs from a young man killed by accident. Lydston, like Brown-Sequard, was approaching old age and had some infirmities. His heart muscle was impaired, he tired easily, and he had a keratosis of his foot. After the transplantation these conditions were greatly improved. He was so impressed with the therapeutic value of transplantation of the testes that he wrote a monograph on the subject and published several reports in the medical journals.

### THE SAN QUENTIN STUDIES

In 1918 the medical department of San Quentin undertook to confirm or disprove some of Lydston's assertions.

At the prison there is an average of three legal executions by hanging each year. Occasionally the bodies are not claimed and are available for postmortem study and research.

The first inmate patient, aged seventy-one, showed such an improvement in general health after the transplantation of a testicle that the operation was performed on twenty more. In none of these cases did the transplant live. It gradually became smaller and later disappeared. No attempt was made to do blood-vessel anastomosis, the organ being cut and sewed to the testicle of the recipient in such a way that the cortex of the two glands were approximated. Grafts of testes later removed and sectioned showed a necrosis of the tissues. Notwithstanding this necrosis, the patients received beneficial effects.

### TRANSPLANTATION TECHNIQUE

Because of the scarcity of human material, it was determined to use that of rams and goats. In the early work a slice of ram's testicle the size of a silver dollar was placed in the pampiniform plexus. In other patients a similar piece was placed in a pocket made under the skin of the abdomen on either side of the navel.

With all these various techniques it was found that the material gradually absorbed, very seldom with suppuration.

In 1922 the technique was modified and has not been changed since. In this the scrotum of the ram is tied tightly above the testicles immediately after the death of the animal. The bag is then cut away and brought to the hospital. There the wool is clipped off and the skin painted with iodin. Under absolutely sterile conditions in the operating room the scrotum is incised and the testes removed. From these the tunica vaginalis propria is peeled off, leaving the matrix. This matrix is then placed in a small meat chopper and ground to about the consistency of tooth paste. To this is added a small amount of chloretone. This material is then placed in two-dram collapsible metal tubes with screw top. The whole tube is immersed in melted paraffin and placed in the refrigerator.

A metal syringe of two-dram capacity is used for administering this material. The plunger is removed and the contents of the tube squeezed into the breach of the syringe. A needle of 16-gauge and two inches long is attached.

In the meantime the patient is placed on the operating table, his abdomen is cleaned and iodin applied to either side midway between the umbilicus and the anterior superior spine of the ilium. At this same place a few minims of novocain, one-half per cent, is injected into the skin, making a small wheal two centimeters in diameter.

Into this wheal the larger needle is inserted and pushed underneath and parallel to the skin surface for one and one-half inches. The testicular material is then slowly injected as the needle is withdrawn, leaving a small burrow filled with the substance. The needle is turned at right angles and another injection made. In this way there are four burrows radiating from the center like the spokes of a wheel. These testicular substance implantations have been made about six thousand times in four thousand patients.

With this technique of testicular substance implantations there is very seldom any local reaction. The burrows can easily be felt by rubbing the finger over the abdomen. Occasionally redness and swelling develops and in about one per cent of the cases suppuration occurs. This quickly subsides when the site is opened. About ten patients in the whole series developed urticaria, and a like number had an edema of the scrotum and penis. This lasted only a few hours.

The procedure entails very little pain, as the novocain decreases this, and the subcutaneous fat is not highly sensitive.

### COMMENT

The implantation of the whole testicular substance is considered an advantage over the mere injection of an extract. In fact, it is not definitely known just what part of the testes produces dynamic effects. This energizing part may be in the extract, or it may be in the residue, according to the method of extraction. With the implantation of the whole substance, on the other hand,

the body does its own extracting *in vivo*. It is known that nothing is left out.

When an extract is injected into the body, as adrenalin for instance, the effect is rapid but readily diminishes, for the extract is quickly absorbed. But with the implantation of the whole testicular substance, absorption is slow, and it seems reasonable to suppose that the system takes from the storehouse as a supply is needed. At any rate, the implants may be felt under the skin for weeks, and sometimes months. In other cases, however, it may be quite rapidly absorbed. Usually one treatment every two to three months is considered adequate. In the early work these implantations were given in many different cases regardless of the disease, in order to find out if possible just what conditions might be affected. In these trials it was felt that some patients were helped by this form of therapy.

*Acne Vulgaris.*—In the prison were a number of cases of acne vulgaris in boys and young men. One hundred and forty-eight patients with acne were treated. Ninety-nine of these were benefited in that their faces cleared up and showed marked improvement. Ordinarily this change took place within two months after the treatment.

*Diabetes.*—By accident it was found that in a diabetic patient the urinary sugar output became negative after an implantation of testicular substance.

Twenty-two other diabetics were then treated and it was found that in most of them the urinary sugar disappeared. The patients felt better, gained in weight, and were able to reduce their administration of insulin. From this experience it would appear that this form of therapy was a good adjuvant in the treatment of diabetes.

*Asthma.*—It was noticed that some of the patients who had asthma were benefited in that their attacks were less severe and less frequent. Perhaps no theories should be evolved, but it was felt that perhaps the implanted testicular substance had a stimulating effect on the adrenals in such a way that more adrenalin was sent into the system with a beneficial effect on the asthma.

*Constipation.*—In this connection it may be said that many of the patients reported that the constipation from which they suffered was markedly relieved by the treatment.

It is reasonable to theorize and say that here the increased adrenalin so affected unstriped muscles of the spastic bowels that normal movements took place. This phenomenon was recorded by Brown-Sequard fifty years ago.

*General Asthenia.*—The type of case which seemed to be most benefited was that of general asthenia, a condition where no definite pathology was found, but the patient felt tired, listless, and weary. Some of these symptoms had developed after influenza.

Of 429 men so classified, 370 patients received marked benefit. They gained in weight and activity and had a feeling of euphoria in contrast to their state of depression before.

*Sexual Function.*—Because of sex psychology considerable raillery has been directed toward this research, and because of it quacks and charlatans have arisen and better men have hesitated to accept deductions.

It is felt that in many cases any therapy which will increase one's feeling of well-being and step up his metabolism will at the same time increase his sexual powers. On the other hand, it has been demonstrated that patients with sexual lassitude, and even impotence, have had a return to normal after implantation of testicular substance.

In ten years of experimental work many interesting observations have been made.

In this work the usual technique of research has been reversed. Instead of experimenting with laboratory animals at first and finding out what effect testicular substance might have on them, work was done on human beings primarily and later checked up on animals.

For example: It has been seen that many men had unusual sexual manifestations after the implantation, and many who were sexually debilitated had a restoration of function. At the prison was a 14-year-old dog which had been a favorite with the guards, accompanying them on the night patrol. He gradually weakened from old age, was unable to make his rounds with the guards, and slept most of the time. General senility had set in. This old dog was secretly given an implantation of testicular substance. Within two days a decided change in his actions took place. He left his bed, resumed his walks with the guards, chased sticks, and for a time was greatly excited sexually. He even mounted his guard's leg in sexual embrace, as young dogs occasionally do. Psychology played no part in this.

*Urinary Sugar in Diabetes.*—Testicular substance implantations had the effect of lowering the urinary sugar in many of the diabetic cases. In some cases the sugar disappeared within two weeks without other medication or change of diet. In corroboration of this it was found that goldfish in a 0.1 per cent dextrose solution utilized about 22 per cent of the sugar in thirty hours. If to the same solution 100 milligrams of testicular substance was added, the same fish used 78 per cent of sugar in thirty hours. This would seem to indicate that this substance has some effect on sugar utilization.

*Euphoria.*—From practical experience it has been found that men to whom testicular substance has been administered show greater activity, are quicker in their movements and have a feeling of euphoria.

### OTHER OBSERVATIONS

*Goldfish Experiments.*—An apparatus was devised to record, on a smoked paper, the movements of goldfish. It was found that the goldfish increased their activity 400 per cent when fed on testicular substance rather than on ground shrimp meat.

Into each of two separate bowls were placed two goldfish. They were weighed each week. To

those in bowl A was fed weekly one-quarter their body weight of ground-up meat. To those in bowl B was fed weekly one-quarter their body weight of ground-up testicular substance. Those fed on the beef gained much more rapidly in weight than did those feeding on testicular substance.

After ten weeks the diet was reversed, "A" getting the gonads, and "B" the meat. Here there was a steep rise in the weights of "B," and a very gradual rise in "A."

Those fish fed on the testicular substance were much more active, continuously swimming about or searching for food, while those fed beef were much less active.

*Frequency of Treatments.*—At the prison, part of one afternoon is devoted to testicular substance implantations. One ram supplies sufficient material for about twenty treatments. There is always a waiting list of fifty to one hundred men anxious for the treatment. This is a fair argument for its effectiveness.

## CONCLUSIONS

After twelve years of work with this form of therapy it may be said that it has definite dynamic effects, and has palliative qualities in several definite conditions.

San Quentin Prison, San Quentin.

## DISCUSSION

JAU DON BALL, M. D. (450 Sutter Street, San Francisco).—Doctor Stanley's paper should give an impetus to the search for the principles underlying his observed results of gland implantations in six thousand men in San Quentin prison.

Why testicular substance implants, as administered by Doctor Stanley, indicate certain results in certain physical ailments is not clear.

In my opinion, it will remain for the biochemist working in the field of endocrinology to ultimately answer the "Why" question.

But Doctor Stanley's account of his six thousand testicular gland implantations, stated without any dogmatic claims and with full recognition that the method was empirical, is, nevertheless, a very significant contribution to the study of the glands of internal secretion.

Over a period of about six years I have worked with Doctor Stanley on selected cases outside of prison. In a study of more than two hundred of these extramural cases, male and female, to whom more than four hundred implants of testicular substance were administered, we noted that 60 per cent responded favorably in varying degree.

The disorders included artificial and natural menopause, diabetes, arthritis, asthma, and acne. In addition a number of patients treated were psychiatric cases, suffering from depression, senility, etc.

In all these cases, in addition to the testicular substance implant, other treatments were also used, but I believe it was clearly indicated the implant was a very valuable aid to the other treatment, for in more than half the cases improvement was definitely noted only after the implant was administered or repeated.

Testicular implant, in my opinion, is not a rejuvenator, and Doctor Stanley does not make such a claim for it. Although we do not yet know "why," it does frequently stimulate metabolism, increase the general activity of the patient, give him a feeling of well-being, and in certain of the above-mentioned disorders improve and sometimes apparently clear up the condition.

RALPH A. REYNOLDS, M. D. (490 Post Street, San Francisco).—I wish to comment briefly regarding two phases of Doctor Stanley's work which it has been my privilege to observe during the past year and a half.

Doctor Stanley refers to the effect of testicular injections on the disappearance of acne. It is a well known fact that acne most commonly makes its appearance during the adolescent stage—from fifteen to twenty years—or during the period when the growth hormones are most active. Confronted, as Doctor Stanley was, with severe cases of acne vulgaris, usually in young men, it occurred to him that there might be a decrease in the hormone of one or more glands concerned with growth. Quite frankly, as he states, he empirically gave whole gland testicular substance to several of the most severe cases and found that most of them improved after the first injection, and many cleared up entirely after repeated injections. With Doctor Stanley's collaboration, I attempted to analyze these cases in order to determine whether or not there is any scientific explanation for his results. The age in the cases analyzed ranged from eighteen to twenty-five years. Most of the patients were tall and slender, and gave the general appearance of adolescent youths. About 70 per cent of them had no body hair, had light beards, and had skin of fine texture; in other words, they gave evidence of delayed development of adult characteristics. Long bone measurements were made of each member of this group. We know that in the case of the adult with normal development we can expect to find the arm spread equaling the height, while the distance from the pubis to the floor is about one-half the height. In the group examined it was found that four out of five revealed measurements showing the long bones to have developed in greater proportion than the rest of the body—that is, the arm spread exceeded the height, and the distance from the pubis to the floor more than equaled half the height of the body. This is generally looked upon as indicating a deficiency in testicular secretion. This, perhaps, partly at least, may explain Doctor Stanley's results in the treatment of acne in these cases. Certainly his work gives us a valuable clue in a more comprehensive approach to this dermatologic problem.

Doctor Stanley has referred to certain results in the lowering of blood sugar in diabetics following the injection of testicular extract. It is by no means easy to find any satisfactory explanation as to why testicular injections will lower blood sugar in diabetes, but that this is the case there can be no doubt. I have attempted to analyze twenty of these cases and have found that in severe cases (that is, blood sugars from 250 to 400 and requiring from forty to fifty units of insulin daily) five to six testicular injections are followed by a decrease in the blood sugar from one-third to one-half, the insulin requirement decreasing proportionately. In the less severe cases, blood sugar dropped to 130-150, the urine became sugar free, and insulin could be completely discontinued. About 75 per cent of these patients gave a history of obesity as existing before the onset of diabetes, indicating a general disturbance in growth and metabolism.

If we were correct in assuming that testicular extract stimulated the pancreas to greater insulin production, then in cases of renal diabetes with low blood sugar and fainting attacks we should expect to find the symptoms aggravated by testicular injections. This was found to be true in one case of renal diabetes carefully observed. This patient entered the prison in May 1929 with complaint of thirst, polyuria and fainting attacks, a blood sugar of from 60 to 80 milligrams, and sugar in the urine. He was given during the next year and a half ten testicular injections, with the result that he had more frequent attacks of dizziness, fainting, and weakness. He finally entered the hospital in November 1930 with a blood sugar of 60 milligrams. The gland injections

were discontinued six months ago and the patient was allowed to return to work. The last blood sugar, in March 1931, was 87 milligrams, and the symptoms of fainting and dizziness were much improved.

I do not pretend to know by what mechanism the testicular extract exerts its influence on these two conditions, but that there are certain objective effects, there can be no doubt.

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H. Lisser, M. D. (384 Post Street, San Francisco). Doctor Stanley has presented his clinical observations concisely and has spared his readers speculative embellishment. For this he deserves credit; and also for devising a relatively simple procedure for implanting testicular material without the necessity of hospitalization.

Indeed it may be granted that Doctor Stanley's method of implanting whole unextracted ram's testicular substance constitutes, up to the present, the only means of obtaining any clinical benefit from administering male gonadal material. Commercial testicular extracts are notoriously inert.

However, it is to be hoped that several researches, which are being prosecuted in various parts of the world, will ere long prove successful in providing the profession with a proper potent extract, comparable to such standardized preparations as thyroid, insulin, parathormone, pituitrin, adrenalin, and theelin. Moore and Gallagher of Chicago have isolated a potent product, but as yet an embarrassingly huge amount of material is required for a still more embarrassing "yield." The same difficulties confront Hartman and Swingle, each of whom have obtained an unquestionably potent hormone from the adrenal cortex, but in such tiny amounts that it costs $3000 to treat one case of Addison's disease for one year.

But even when this desired male sex hormone becomes available, its clinical indications will remain to be determined. It may have a wide, vague range of usefulness as a sort of tonic, as seems suggested by Doctor Stanley's experience, but whether we will be able to diagnose specific states of male hypogonadism is not as certain as one might anticipate. The characteristics of both pre- and postadolescent castrates (eunuchs) have been abundantly recorded, more particularly in the classical studies of Tandler and Gross. Likewise deficiency signs and symptoms have been described under the caption "Eunuchoidism," initially by Duckworth and Griffith, but examples of these indubitable syndromes are relatively rare, and specific male gonad substitution therapy has been signally ineffective.

Furthermore, although it is hazardous to indulge in predictions, it is altogether likely that those who will seize upon a truly potent male sex hormone as a cure for impotency will be doomed to disappointment, for the following reasons: the vast majority of such cases are of psychic origin, a few are due to urological disease, and remarkably few indeed to endocrine deficiency. And it is rather startling and disconcerting that some incontestable cases of male castrates are on record who, nevertheless, were still possessed of potential coeundi.

Doctor Stanley's observations on the improvement noted from testicular implantations in such conditions as acne, diabetes, asthma, and constipation are certainly interesting and worthy of record, but will hardly supplant the recognized therapy for these ailments.

Perhaps we may hope that future discoveries will enable us to recognize mild cases of male hypogonadism which will respond to a potent testicular hormone, just as mild cases of hypothyroidism are now benefited by thyroid substance, but it must be granted that nature has been very generous in providing two testicles, and that a little of one seems to suffice ordinarily.

## FIBROIDS AND OVARIAN CYSTS COMPLICATING PREGNANCY*

By Frank W. Lynch, M. D.
*San Francisco*

Discussion *by Edward N. Ewer, M. D., Oakland; John W. Sherrick, M. D., Oakland; Frank C. Ainley, M. D., Los Angeles.*

PREGNANCY may complicate the treatment of tumors, and tumors may complicate the treatment of pregnancy. Evidence of these facts is suggested by the following list of cases in my service at the University of California, and exclusive of consultation: two pregnancies with cancer of the uterine cervix, one with cancer of the labia, four with cancer of the breast, one with primary cancer of the lung, two with carcinoma of the appendix, one with endothelioma of the pharynx, two with brain tumors, one with tumor of the spinal cord, two with tumors of the bladder, one with sarcoma of the thigh, many with tumors of the thyroid, forty with uterine myofibroma, and eight with ovarian cysts. The only tumors which seemed lacking at first sight were bony tumors of the true pelvis of which we have examples only in nonpregnant women.

Our interest in this paper centers in fibroids and in ovarian cysts.

### FIBROMYOMATA

These tumors are often seen with pregnancies. For the most part they are of trivial size and of little clinical importance. Rarely, however, they may constitute a serious threat to the patient's safety in event the tumor is large and undergoes degenerations which demand attention in pregnancy or if it blocks labor as in the rare cases in which the tumor lies in the bony pelvis.

In earlier times fibroids sometimes complicated labor in a terrible manner, largely because surgery was practically interdicted. No matter what the present-day physician does in the way of manipulation, his result cannot be worse than was uniformly obtained by the cesarean operation in earlier time.

Now the conditions of former times no longer obtain. Fibroids of large size are rarely seen in pregnancy. Surgeons remove them while they are quite small and rarely in pregnancy. Moreover, they usually perform hysterectomy. Cervical fibroids are known to be rare, possibly only five per cent of all cases, and yet they constitute the bulk of fibroids which jam in the pelvis. Surgery, moreover, now offers us the possibility of removing fairly safely the offending tumor during pregnancy, or the child at term with or without the tumor or the uterus in event the woman has come to term and the fibroid threatens a blocked labor. Fairly safely, I say, in comparison with the mortality of former days, since even at

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the present time there is more risk from such operations on pregnant women than from much more major abdominal surgery performed on nonpregnant women. For these reasons the subject is again worthy of discussion at important medical meetings.

The whole field, however, is too large for casual review. Nor is review necessary since the basic facts concerning fibroids and pregnancy are now well known, thanks to several critical and exhaustive reviews of the literature, which represent, however, many phases in the development of modern gynecology.

Granting that the fibroids now seen during pregnancy are usually of small size and of trivial importance, the fact remains that women with larger fibroids occasionally become pregnant and they then may present definite problems regarding proper management. What advice shall we give a patient who greatly desires children and who comes to us two or three months pregnant with a fibroid mass as large as the pregnancy? Much, of course, depends upon the location of the tumor, but unless it is cervical there may be no more difficult question to answer. Four courses are open: (1) to perform a hysterectomy; (2) to abort the patient and remove the tumor subsequently; (3) to attempt a myomectomy with or without removing the fetus; or (4) to allow the woman to progress in her pregnancy and meet emergencies if they arise.

1. I believe that most such cases are treated by hysterectomy although it would appear that it is not always necessary so to do. The general surgeon interprets the tumor as undoubted evidence that the woman not only cannot go to term, but is most likely to undergo some tremendous catastrophe if she attempts to do so. This belief is abundantly confirmed by reviews of the literature. Nearly half of the cases in Carsten's large series of fibroids and pregnancy had had hysterectomy in very early pregnancy, often before the condition of pregnancy was diagnosed. That fact, however, did not prevent the cases from being adduced as evidence of the tremendous complication of fibroids which are associated with pregnancy. Many patients who understand the true condition will take the comparatively small risk of going to term to have what may be an only child.

2. The Gordian knot cannot be cut by performing abortion alone because this operation may be most difficult and because the danger by no means disappears after removal of the ovum. Fibroids in the puerperium may be as dangerous as in pregnancy or labor. They often slough and become infected and sometimes life is saved only by hysterectomy. Abortion, I believe, is warranted as a rule only if it is followed by myomectomy. The operation, then, may well be entirely abdominal, although it is very likely to wind up as a hysterectomy.

Fibroids may disappear almost completely after the pregnancy they have complicated has terminated, only to reappear and complicate subsequent pregnancies. This is one of the many reasons for performing myomectomy after the patient has been aborted.

3. The question of myomectomy during pregnancy has become a live subject again. Its advocates have increased in number and have reported many successful cases. There is no doubt concerning the necessity of removing large pedunculated growths early. They jam in the pelvis, may undergo torsion and present extensive degeneration, in event the pregnancy continues. The point for discussion is the rationale of myomectomy in tumors embedded in the uterine wall.

Myomectomy under such conditions has always appeared a surgical curiosity with a very narrow field for its possibility. Its indication is pain from degenerations which is not improved by rest. The operation is least likely to be followed by abortion if done about the fifth month of pregnancy. Fundal fibroids usually grow most rapidly until the fourth month and more slowly thereafter for which reason the most extensive degenerations occur about the middle of pregnancy. Kosmak believes that if fibroids cause symptoms during pregnancy, including pain and tenderness, slight elevation of temperature, and perhaps bleeding, that we should in all cases attempt a myomectomy. After the abdomen is open and the true conditions are determined, one can terminate the pregnancy if necessary. This course, however, will give to many the possibility of future pregnancy.

This may be good practice for the most expert surgeons, but, personally, I would far rather let the case rest with nature, with a greater chance, I believe, of less mortality and marked morbidity. Occasionally the surgeon may cut down so far as to expose the sac in which the fetus is lying without interrupting the pregnancy, yet this happy sequence is not so common that it can confidently be expected. While a firm advocate of myomectomy in selected nonpregnant cases, I fear it during pregnancy because it carries an unduly high mortality.

Much of the very considerable mortality and morbidity of both cesarean section and myomectomy is due primarily to the fact that the hypertrophied uterine musculature is not good material for surgery. The incised tissue has already started involuting by the time you start its closure. If the cut margins are not loose enough to almost fall together before suturing, pressure of the sutures may break down the involuting uterine muscle and greatly retard or even prevent good healing.

Secondly, one cannot secure good hemostasis in either the myomectomy or cesarean wound. In ordinary muscle repair the surgeon ties off all bleeding points, a procedure which is often impossible in both cesareans and myomectomies. In these latter operations hemostasis is obtained by strangulating the bleeding points with continuous sutures, a practice which is not idealistic surgery. For these reasons the closure has raw surfaces so that marked adhesions seem a necessary sequence of myomectomy. Moreover, I feel certain

that the importance of pelvic adhesions has not yet made an adequate impression on gynecologists. There is also the question as to whether the stitches will hold if the woman goes immediately into labor.

There are many other reasons why myomectomy, at least in general hands, should not be attempted as a routine during pregnancy. The operation is usually incomplete in that it rarely removes all tumors. Moreover, it is so time-consuming that the prolonged anesthetic may readily precipitate a toxemia. Very often when the abdomen is opened we find many more tumors present than we had formerly suspected, in which event myectomy seems futile and we are most likely to perform hysterectomy.

For these reasons I feel that there should be very definite indications for opening the abdomen in these cases, because the operation is most likely to wind up as a hysterectomy.

4. In general, I think medical experience indicates that patients without pedunculated tumors should be allowed to progress in the pregnancy if they possibly can. Nature very often overcomes difficulties that seem impregnable even to the obstetrician of widest experience, and many cases come to term. Yet the course of such pregnancies is not always smooth. All large tumors become edematous: most of them also show some beginnings of red degeneration which, if marked, may cause exquisite pain.

Women with long abdomens are more likely to reach term than short-waisted women in whom the degenerating fibroid is much more apt to be forced more firmly against the abdominal walls. Yet several women with large tumors who "stuck it out" and came to term told me that they often had what seemed unendurable pain of which they did not complain for fear I would interrupt the pregnancy. Yet at time of my examinations they had neither temperature nor evidence of marked degenerations in the tumors. All patients with fibroid complicating pregnancy should be warned to avoid strain and fatigue and to make a business of safeguarding their pregnancy because of the increased chance of abortion or of premature labor.

There is always a question as to the best treatment for women who have come to term after myomectomy in early pregnancy. Such history, I believe, presents a strong argument for cesarean. This is strengthened if the patient is not young, if not in excellent condition, or if the fetus lies in even a relatively unfavorable position. Practically, however, two operations in close succession present economic problems for the patient's consideration.

Even of greater interest, is the best treatment of women at term with large fibroids in the fundus who have no other indications for operation. Most of these women deliver quickly and spontaneously. If they do not deliver quickly, their labor may drag on for a long time because fibroids in the uterine wall frequently cause inertia.

When there is indication for cesarean at term, the question often arises whether it should be followed by hysterectomy or myomectomy. The patient's age may be an important factor in determining the treatment. Hysterectomy is relatively safe, yet if the patient is comparatively young we should bear in mind that unless there are many small tumors, fibroids may involute so completely that they seem to have disappeared after labor. We may let such tumors alone with safety to the patient because thromboses follow myomectomy more often in the pregnant than in the nonpregnant conditions. The mother has less risk if her child is born through natural passages unless there are interstitial tumors which become displaced in involution during the puerperium and subsequently become infected. Large sessile subperitoneal tumors are not likely to degenerate during the puerperium. When I have performed myomectomy on such women a few months after normal or forceps delivery, I have been surprised at the extent the tumors had involuted. This treatment, although safe, does not always fit in with the patient's economic conditions.

No discussion of fibroids can be complete unless it emphasizes the frequency of infectious processes during the puerperium. These have been known ever since Hippocrates described them, but fortunately they are not common. The patient in this type of case usually has a low-grade long-continued fever before sloughing of the tumor. If free drainage follows, the infection may clear fairly promptly, but sometimes remains as a uterine abscess. For which reason hysterectomy is often advisable in early infectious processes during the puerperium. The literature is filled with case reports illustrating the folly of waiting. Twice in my own experience I have had this complication where hysterectomy was impossible on account of the patient's cardiac condition. With the exceptions described above and just enumerated, I believe that fibroids and pregnancy should be left alone through labor and the puerperium unless there are definite indications for operative interference.

## OVARIAN CYSTS

These tumors are not commonly found in pregnancy. Their frequency varies with reports of different series. In Sloane Hospital (1931) they occurred once in 500 cases; in the University of California Hospital, once in 1500; in McKerron's compilations (1903) it was once in 2500 pregnancies. The tumors are thought to occur more often in nonpregnant women of the same relative age for which reason some believe they interfere with conception. Most of the cysts are small; they may or may not grow rapidly during pregnancy.

The character of the cysts varies in different series. Dermoids, however, are the most common and serous cysts the most rare. Lutein cysts, although often found, rarely cause complications. Many writers exclude them from compilations since they disappear spontaneously after pregnancy.

In the absence of complications the cyst may cause no symptoms: 37 per cent of Caverly's seventy-three cases never gave symptoms. If the tumor is large it may cause pressure symptoms, varying from discomfort dyspnea, bladder irritability, etc., to actual pain. The well-known group of symptoms of ileus follows torsion of the pedicle with strangulation, hemorrhage into the cysts usually follows, and sometimes even suppuration. Adhesions are common but seldom cause definite symptoms.

The usual accidents to ovarian cysts that occur in the nonpregnant are even more apt to occur during pregnancy. According to McKerron, twisted pedicle occurs in eight per cent of such tumors in nonpregnant women, in 12 per cent in pregnant, and in 20 per cent during the puerperium. He found acute complications of the cyst in 25 per cent of cases during pregnancy, and 40 per cent during the puerperium. Rupture of the cyst was common in early time, as was necrosis because the cyst was traumatized during labor. Now they are uncommon. Eiss, in 1930, reports a case of bilateral tumors, each of which ruptured in pregnancy. Graefe states that ovarian cysts produce abortions or premature labor in from 14 to 20 per cent of cases because the tumor or uterus becomes incarcerated in the pelvis, the pedicle becomes twisted or because of pressure from the tumor masses or by infection. Nearly one-half of ovarian cysts are in the pelvis during pregnancy.

The diagnosis is easy if the cyst is in the pelvis, but it is often missed if the tumor is small and behind the uterus, when its presence may not be revealed until after labor. Recently I removed such a tumor. The more carefully the antepartum examinations are made the more often the diagnosis will be made early. McKerron, who collected 1290 cases in 1903, says "80 per cent of small tumors occupying the pelvis are found only upon pelvic examinations in labor." This also was the fact in three cases which I saw in consultation. On the contrary, the diagnosis was made during pregnancy in 77 per cent of Caverly's eighty-three cases. The absence of symptoms in one-fourth of cases shows the necessity of most careful antepartum routine examinations.

The physical findings are often misleading. Hard semisolid dermoids or cystic tumors made tense by pressure may be mistaken for fibroids or vice versa. The abdominal distention with large flaccid cysts and fat abdomen may be most confusing. Ascites is common with cysts but rarely occurs with fibroids.

There is no difference of opinion as to the proper treatment of ovarian cysts discovered early in pregnancy. All agree that they should be removed whatever their size, type or location. The fourth month of pregnancy is acknowledged to be the time at which abortion is least likely to follow operation. There is some difference of opinion as to what you should do with a very early pregnancy if the tumors are bilateral. Fortunately this is a comparatively rare finding, usually estimated as five per cent of cases.

There are many reported cases where both ovaries have been removed and the pregnancy has normally continued. It is usually stated that the corpus luteum is indispensable to pregnancy for the first two months and removal during that time precipitates abortion. Waldstein, however, recently removed bilateral dermoids at the second month without interrupting the pregnancy. Caverly reports two abortions following eight single ovariotomies before the third month of pregnancy. Twice I have been unwilling to allow an early pregnancy to continue after having removed both ovaries. Both women, however, had had many children and both had had torsion and peritoneal complications.

The question naturally arises as to the best method of delivering women whose ovarian tumor was removed during early pregnancy. The abdominal wall in these cases will probably be strong enough to stand a normal labor. If the operation was done late in pregnancy, one must always consider the necessity of cesarean. Yet this plurality of operations often entails serious economic consideration. Within the last ten years I have seen several cases where abdominal tumors were diagnosed in the last part of pregnancy and were let alone until term when the patient was delivered by cesarean section. Many, however, believe that the mortality will be less if the woman is allowed to deliver and the tumor is removed during the puerperium. However this may be, all agree that never should the child be dragged past the tumor. Dermoids rupture easily and excite a chemical peritonitis. Shock follows the rupture of other cystic tumors. Tumors whose presence were not suspected during a pregnancy or labor should be operated during the puerperium since torsion is far more common than in the nonpregnant condition. The puncture of the cyst or the incomplete removal through the vagina should no longer be attempted. It belongs to the old era of surgery.

In summary, we may say that in sharp distinction to fibroids complicating pregnancy or labor which seldom require surgical operations, ovarian cysts discovered during pregnancy, labor or the puerperium, with very few exceptions call for immediate surgical interference. Succinctly we may say that in dealing with fibroids one must have an exceptional case if operation is required; with ovarian tumors one must have an exceptional case if operation is not required.

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DISCUSSION

EDWARD N. EWER, M. D. (251 Moss Avenue, Oakland).—Doctor Lynch has long experience and sound judgment to back his dogmatic statements. His conservative rules for treatment of these tumors complicating pregnancy may be followed with confidence for they are safe and will not disappoint.

A fibroid may produce symptoms warranting surgical interference during the course of pregnancy, but such an emergency must be rare, for I have seen many pregnancies complicated with fibroids of all sizes but never one which urgently required operation before term. Had I done myomectomies and hysterectomies on them all solely because of the presence

of the tumors many babies and possibly some mothers would have been lost. I have permitted all such pregnancies to go to term.

One patient now two months postpartum with a fibroid still reaching above the umbilicus had an easy forceps delivery after rotation of the head from a posterior position. The puerperium has been quite free from unpleasant symptoms. Two others were cesareanized successfully and with as little risk, in my opinion, as they would have undergone had myomectomy or hysterectomy been performed in the early stages of their pregnancies, and there was the great satisfaction of preserving the infants. Another large fibroid became necrotic after delivery and was removed without trouble on the seventh day postpartum.

One of my first fibroids, encountered upon examination in the beginning of labor, occupied nearly the whole of the brim of the pelvis, but it receded as the cervix retracted and caused no interference with the labor, which was short and spontaneous. I have since had several similar experiences.

One trying case was a breach presentation with prolapse of the cord. There were several small fibroids low in the uterus. The baby was saved but the uterus was infected and convalescence was slow. Cesarean section was unusual and hazardous then, but in its present state of perfection it would, I think, be the treatment of choice in such a complicated case. As Doctor Lynch states, there is general agreement that ovarian cysts should be removed during the fourth or fifth months of pregnancy and a pedunculated fibroid may present the same dangers and need removal. Doctor Lynch's last paragraph qualifies as an axiom and its retention in the memory should return profits.

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John W. Sherrick, M. D. (350 Twenty-ninth Street, Oakland).—I find it hard to generalize in discussing this question because it is so difficult to prognosticate intelligently the course in each individual case. Too often the apparently simple fibroid develops complications—degeneration with pain and its attendant dangers, twisting of pedicle with vascular strangulation and peritoneal irritation, irritable uterus with threatened abortion, etc.—which endanger the patient, while the large tumor, with every evidence of potential catastrophe, will offer no interference during pregnancy, labor, and the puerperium. Our general plan is selectivity, considering each individual case carefully with all the possibilities in mind and discussing frankly and in detail the various problems and possibilities with the patient and her husband before deciding upon a line of treatment. We are growing more and more conservative except in those cases where dangers are very evident because we feel that the apparent risks involved are not borne out in the majority of cases. If the condition is one to demand abortion I firmly believe that the fibroid condition should be dealt with immediately or shortly after the abortion, conservative myomectomy being utilized if feasible and depending on the patient's age, plus the desire for children. In short, we subscribe to a policy of watchful waiting in the majority of cases where the risk of complicating development is relatively minimized, eliminating certain pedunculated tumors and those attended by a very definite risk.

I am not in favor of myomectomy of the intramural tumor during pregnancy, but favor careful supervision during the prenatal period with whatever management at term seems demanded by the individual picture as pointed out by Doctor Lynch. Extensive myomectomy during pregnancy in the majority of cases seems fraught with too many dangers to justify its use except in unusual circumstances. These dangers, as he outlines them, are very well taken, namely, immediate postoperative abortion under dangerous local and general conditions; poor coaptation and healing of uterine wound edges or pressure necrosis by sutures; poor hemostasis of uterine wounds, subsequent dangers at the time of delivery, disturbing pelvic adhesions, too extensive or inexpert surgery which often might better be avoided altogether or deferred, etc. If operation is indicated it seems more logical to abort the patient at the same time, leaving her the possibility of a future pregnancy under safer conditions.

The management at term of the patient with fibromata of real importance presents grave problems. While many will deliver spontaneously, others meet with serious difficulties—obstruction, uterine inertia, faulty presentation, premature separation of the placenta, postpartum hemorrhage, degeneration and sloughing of the tumor postpartum, etc. Since these complications cannot be anticipated we favor conservative and intelligent cesarean section, dealing with the uterine pathology as indicated.

I agree completely with Doctor Lynch in his conclusions regarding the treatment of ovarian cysts complicating pregnancy. A few months ago I removed an enormous adherent dermoid cyst from a woman who was three months pregnant. Convalescence was uneventful and the pregnancy continued normally to term when she was delivered spontaneously and easily.

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Frank C. Ainley, M. D. (1136 West Sixth Street, Los Angeles).—There is no cardinal point upon which one would disagree with Doctor Lynch in his splendid and honest discussion of fibroids complicating pregnancy.

I have been impressed with two points in relation to this problem:

First: Spontaneous miscarriage in the early months commonly occurs.

Second: Spontaneous delivery and a normal puerperium can be expected in a very large percentage of cases going to term.

Myomectomy during pregnancy must necessarily increase the percentage of miscarriages. Naturally a pedunculated fibroid with twisted pedicle or a large fibroid so situated as to obstruct the birth canal require surgical treatment, the types of which are well recognized. Other cases, however, may well be allowed to progress without surgical interference and with reasonable assurance of a happy outcome.

Our experience with ovarian cysts complicating pregnancy would lead us to be more conservative than is recommended by Doctor Lynch.

I am inclined to believe that definitely pathological ovarian cysts occur at least as often as one in five hundred pregnancies, as was the case in the Sloan Hospital reports. Spontaneous miscarriage in cases seen by us without operation was not common.

Without search of my files, I readily recall the following eight cases.

Three patients with ovarian cysts complicating pregnancies were carried to full term, delivered normally, and the ovarian cysts removed at later dates. One of these showed bilateral ovarian cysts.

Another patient was carried to full term and delivered naturally but the ovarian cyst ruptured during labor, without disastrous consequences.

Another was carried to full term, the cyst having ruptured late in pregnancy, and when a cesarean section was done, because of a contracted pelvis, a few adhesions remained about the ovary.

I have seen one patient where the ovarian cyst became twisted on its pedicle at about four months, necessitating oöphorectomy. This patient subsequently went to term and was delivered normally.

Two cases terminated in abortion following removal of ovarian cysts at about two months of the pregnancy. One of these was bilateral and the abortion occurred some two or three months following operation.

I recall no patient in whom we observed spontaneous early abortion not associated with operative interference.

We have no reason to believe that ovarian cysts will retrogress after pregnancy, as may be the case with fibroids. The treatment of ovarian cyst is surgical. The complications of cysts with twisted pedicle during pregnancy, labor or the puerperium, and the complication of the rupture of a cyst may be unpleasant, yet my experience leads me to believe that, where the patient is in close touch with a trained obstetrician and satisfactory hospital facilities, one may be justified at times in following a conservative course but must be prepared for emergencies which can arise.

I am satisfied that had the ovarian cysts in all of the patients enumerated above been removed promptly when first detected or at the fourth month, we would have lost more of the pregnancies by miscarriage.

In the interest of completeness one would like Doctor Lynch to have mentioned the cases of pregnancy complicated by large cyst in the broad ligament. These may be of sufficient size to prevent delivery through the usual channel. Operation to remove the cyst during pregnancy could be best done at the sacrifice of the uterus and pregnancy. Although the delivery is necessarily done at term by cesarean section, the removal of the cyst at the same time is very difficult and dangerous because of the marked vascularity of the pelvic structures and can be accomplished with less risk at a later operation.

## SURGICAL LESIONS OF THE BILE DUCTS AND THE GALL-BLADDER: CERTAIN PRINCIPLES IN THEIR TREATMENT*

*By* WALTMAN WALTERS, M. D.
*Rochester, Minnesota*

IN considering the surgical treatment of lesions of the biliary passages, I shall deal only with the most important features concerned in: (1) indications for operation, (2) significance of jaundice, and (3) associated lesions of the liver and pancreas.

### INDICATIONS FOR OPERATION

It will not be disputed that patients with lesions of the gall-bladder that produce pain severe enough to require morphin do not afford a problem for the clinician, particularly if the colic appears at frequent intervals. The necessity and value of cholecystectomy or cholecystostomy in these cases is as well appreciated by laymen as by the profession. There is a group of patients, however, usually women, who have stones in the gall-bladder, without characteristic symptoms, and they are accidentally discovered by the roentgenologic examination, in the course of a general examination, or at operation for another trouble. Gall-stones of this type have been given the erroneous name of "silent gall-stones," silent because they have existed unknown to the patients, yet far from silent from the standpoint of inactivity or potential harmful effects.

Clinical and experimental evidence is overwhelmingly in favor of the hypothesis that the formation of stones in the gall-bladder occurs only in the presence of infection. Such infection in the walls of the gall-bladder may spread through its lymphatic structures to the liver, examples of which are evident hepatitis in the portion of the liver which overlies the diseased gall-bladder. Extension of the infection in the walls of the gall-bladder, through its lymphatic structures to the pancreas, is not uncommon, clinical evidence of which is the indurated, nodular feeling of the pancreas on palpation. More exaggerated effects on liver and pancreas, secondary to infection in the walls of the gall-bladder, are illustrated by a group of patients operated on for diseases of the biliary passages who were jaundiced at the time of operation. Stones, strictures or tumors were not present to obstruct the common or hepatic ducts. In such cases cholecystectomy and drainage of the common bile duct relieves the jaundice and restores the patient to health.

In a few cases in which examination unexpectedly revealed stones in the gall-bladder and cholecystectomy was advised, the patients wished to defer operation. They have returned sometimes within a comparatively short time, complaining of increasing dyspepsia or of biliary colic. In some of these cases it has been found at operation that a stone had been impacted in the cystic duct with distention of the gall-bladder and empyema. The stones apparently had left the gall-bladder in the course of an attack of colic and had entered the cystic duct or had passed through it into the common bile duct. Delay in removing the diseased gall-bladder and the gall-stones increased the extent of the lesion as well as the risk of operation, both of which would have been avoided by operation when the disease was confined to the gall-bladder.

There is a group of cases of disease of the gall-bladder, with or without stones, in which pylorospasm or other disturbances of motility of the gastro-intestinal tract occur secondarily, producing in some instances rather characteristic dyspepsia; in others bizarre features. The distressing feeling of fullness in the epigastrium noted soon after eating, and its aggravation following the eating of food such as raw apples, fats, cabbage, and particularly fried foods, is almost pathognomonic of cholecystitis. In this type of case, in which the roentgenogram has shown the gall-bladder to be incapable of filling and emptying normally, I am inclined to advise operation, particularly if the dyspepsia has been sufficiently continuous or disturbing to interfere with the patient's health. In such cases accurate determination of the site of the infection is of the utmost importance and the necessity of operation must be accurately determined, else failure completely to relieve patients may lead them to discredit cholecystectomy. The so-called failures to cure following cholecystectomy may occur in cases of this type, and yet, in properly chosen cases, as excellent results may be obtained as in cases of biliary colic. The value of operative procedures is further emphasized by the fact that they lead to exploration of other abdominal viscera. A demonstrable, definitely subacute, or even

* From the Division of Surgery, the Mayo Clinic, Rochester, Minnesota.

* Read before the Upper Peninsula Medical Society, Houghton, Michigan, August 13-14, 1931, and the Utah State Medical Association, Salt Lake City, Utah, September 9 to 11, 1931.

an acute infection sometimes has been discovered to exist in the appendix. I recall a case of mild dyspepsia in which the symptoms did not seem to warrant cholecystectomy. The day following examination an acute exacerbation developed of what for the first time appeared to be acute appendicitis rather than cholecystitis.

### SIGNIFICANCE OF JAUNDICE

In considering the significance of jaundice, I shall refer only to the obstructive type. If jaundice is obstructive it should be determined whether the obstruction is within the liver or in the extrahepatic bile passages. Probably the simplest method of differentiation can best be expressed as follows:

In a case of painless jaundice in which the amount of bile in stools or in duodenal content is normal, and the gall-bladder is not palpable, the possibilities are that the obstruction is intrahepatic. Obstructive jaundice following attacks of biliary colic, or accompanied by chills and fever, or painless jaundice with absence of bile in the stools and a palpable gall-bladder, are most likely to be due to an obstructing lesion of the extrahepatic bile ducts. From the standpoint of differential diagnosis of lesions obstructing the common and hepatic bile ducts, it might be emphasized that biliary colic followed by jaundice, with or without chills and fever, is indicative of intermittent obstruction to the passage of bile from the liver to the intestine. This is true whether the cause of the obstruction is stone in the common or hepatic bile ducts, tumor in the head of the pancreas, or stricture. Furthermore, painless obstructive jaundice may occur from the same causes. It has been said that no one is infallible in making a differential diagnosis of obstructive jaundice. The diagnosis is always difficult and the chance of a life saved is so important that no matter how positive the evidence of a malignant lesion may be, exploratory operation is advisable if the patient's general condition will permit such a procedure with reasonable safety.

A period of observation of three or four days in cases of obstructive jaundice enables one to determine whether the jaundice is fluctuating. This can be determined best by the van den Bergh test of the amount of bile pigment in the blood serum. If the degree of jaundice is receding, it is best to delay operation until the amount of bile pigment in the blood serum reaches a minimal level. On the other hand, should the jaundice be increasing, the advantages of immediate exploration must be weighed carefully against the increased risk of operation. In this period of observation the patient can be prepared for operation by administration of a sufficient quantity of fluids, usually 3000 cubic centimeters daily, and an abundance of carbohydrates, to compensate for the disordered function of the liver; the administration of agents that increase blood coagulation, such as calcium chlorid intravenously or transfusions of blood, may compensate for the effect of bile in the blood. In general, if the concentration of serum bilirubin is greater than 15 milligrams in each 100 cubic centimeters, the parenchyma of the liver may have been considerably injured. I have observed patients of this type who failed to recover, owing to insufficiency of the liver after the simple removal of stones obstructing the common bile duct, a further argument in favor of early operation in cases of cholelithiasis.

In dealing with stones in the common bile duct, it is absolutely essential that all stones be removed, else obstruction will recur in which event increased jaundice or uncontrollable bleeding, with terminal hepatic and renal insufficiency may prevent recovery.

In cases of stricture of the common bile duct in which there is sufficient normal duct above the stricture to permit anastomosis to an opening in the duodenum, a union of mucous membrane to mucous membrane should be secured; this is by far the best method of restoring continuity between the biliary and the intestinal tracts. There are scores of records in The Mayo Clinic in which this operation has been carried out and the patients have lived without evidence of obstruction for a sufficient number of years to prove that the obstruction has been satisfactorily and permanently relieved.

There are cases of complete stricture of the common and hepatic bile ducts in which the chances of reëstablishment of passage of bile from the liver into the intestine are thought to be almost hopeless. In such cases, within the last seven or eight years, relief has been afforded by establishing external discharge of bile and later restoring biliary-intestinal continuity by coning out the established external biliary fistula and transplanting it into the stomach or duodenum. In the early part of 1931 I reported five such cases in which I had operated and which I had studied for several years. The results were surprisingly good.

### ASSOCIATED LESIONS OF THE LIVER AND PANCREAS

In tumors of the head of the pancreas in which obstruction of the common bile duct is produced, diagnosis is made immediately on opening the abdomen; the gall-bladder and the common bile duct are distended, but the walls are normal in color and thickness. In the head of the pancreas is felt an indurated, irregular, almost stony mass, typical of a carcinoma of the pancreas. In such cases anastomosis of the gall-bladder to the stomach or duodenum, besides prolonging the lives of patients, affords relief of the jaundice and of the troublesome itching of which most patients complain bitterly. I have observed a few patients with this type of obstruction who have lived comfortably and have carried on their work for more than three years. It must not be forgotten that in some instances the clinical diagnosis of a malignant lesion, with tumor in the head of the pancreas, may be erroneous; the enlargement of the

obstruction at the head of the pancreas may be the result of inflammatory rather than of malignant change. A permanent good result, with relief of the obstruction, can be expected in these cases. The possibility of error in the clinical diagnosis of carcinoma of the head of the pancreas, averages, I believe, about 15 per cent; thus it would seem best not to commit oneself hurriedly to a diagnosis of a malignant lesion. A diagnosis can be made only by removal of a specimen from the pancreas; however, this is done only in exceptional cases because of the danger of uncontrollable postoperative bleeding. On the other hand, if patients live longer than five years following cholecystenterostomy, it may be assumed that the obstructive lesion was inflammatory.

I have mentioned briefly a group of cases in which jaundice may accompany cholecystitis, without evident cause for the obstruction in the common or hepatic ducts or in the pancreas. Usually the infection in the walls of the gall-bladder, which may be slight, is the result of obstruction within the liver or in the pancreatic portion of the common bile duct, due to extension of the infection from the gall-bladder to these structures. In other cases the jaundice is due to induration from infection extending from the gall-bladder, down through the walls of the cystic duct, into the walls of the common bile duct; the burden of proof that a stone or stones is not the cause of the obstruction rests squarely on the surgeon's shoulders. In these cases the common bile duct must be opened and explored thoroughly with scoops for stones. The surgeon should not be satisfied until he has ascertained that the exploring scoop slips readily through the lower end of the common bile duct into the duodenum.

### POSTOPERATIVE CARE

The significance of the care of patients following operation for lesions of the biliary tract, especially patients who have jaundice, cannot be overemphasized. Sufficient fluid must be maintained in the body. At times the intravenous injection of glucose, 10 per cent in physiologic sodium chlorid solution, is of a decided advantage. If oozing takes place, intravenous injections of solution of calcium chlorid or transfusion of blood, repeated if necessary, will often prove to be life-saving measures. Should the patient bleed subsequent to operation, I have never hesitated to reopen the incision to determine the site of the bleeding, and to control it, regardless of the condition of the patient. On two occasions (one of which occurred within the last six weeks) such procedures, I am certain, made it possible for the patients to recover. A study of the concentration of bile in the blood, of the coagulability of the blood, of the function of the kidneys subsequent to operation, afford valuable information of the patient's progress; such study is especially important if the patient's convalescence is troubled, for it affords indications of the site of the trouble and assists in determining the proper methods directly to overcome it.

The Mayo Clinic.

## CARDIOSPASM*

*By* JOHN HUNT SHEPHARD, M. D.
*San Jose*

DISCUSSION *by Gunther Nagel, M. D., San Francisco; F. A. Speik, M. D., Los Angeles.*

IN 1906 Dr. H. S. Plummer, in a paper reporting forty cases of cardiospasm, read before the Minnesota State Medical Association, said: "So little attention has been paid the subject by American clinicians that a brief general consideration seems desirable."

Since that paper was so complete, any subsequent writings are only a restatement of the findings therein contained, which probably explains why so few papers have been presented upon this subject. My only excuse for presenting this paper is to refresh your memory, for I am confident that many of these cases are being overlooked.

Though the condition is most distressing, easy to diagnose, successfully and almost magically relieved, it is not receiving the attention its frequency entitles it to.

Vinson reports 415 cases showing definite roentgenologic evidence of obstruction to the barium meal, seen at the Mayo Clinic from January 1908 to June 1923. This is approximately one out of every eleven hundred admissions. Since the vast majority of their patients had recent medical advice elsewhere and only rarely had the cardiospasm been recognized, we must conclude that proper consideration has not been given to this condition.

In 1874 Von Ziemssen and Zenker collected the first series of cases of cardiospasm from autopsy records and considered them to be idiopathic dilatation of the esophagus. Mikulicz in 1882 was the first to attribute this dilatation to spasm of the cardia.

### ETIOLOGY

The etiology is unknown. Though the intermittent spasmodic closure of the cardia suggests a nervous origin, definite evidence of neurosis is usually absent. Recent advances in our knowledge of the sympathetic nervous system and its control over nonstriated muscle fibers, permits one to speculate that perhaps the sympathetic nervous system may have something to do with the causation of cardiospasm and megacolon, and ultimately, on this same basis, we may transfer asthma to the surgeon's field.

The symptoms of cardiospasm are often pathognomonic. Moynihan once said duodenal ulcer can usually be diagnosed over the telephone. So cardiospasm is usually diagnosed from the history, though the x-ray must confirm or deny the diagnosis.

### THREE STAGES IN THE DEVELOPMENT OF CARDIOSPASM

There are three stages in the progress of the development, or we may say three degrees, of cardiospasm.

* Read before the General Surgery Section of the California Medical Association at the sixtieth annual session, San Francisco, April 27-30, 1931.

The first stage is spasm of the cardia without food regurgitation. This is characterized by pain or discomfort beneath the sternum or a choking sensation during deglutition. These symptoms, which may occur with the swallowing of liquid or solid food, are usually of short duration, and the patient proceeds with his meal. A definite diagnosis is rarely possible during this stage, though a fluoroscopic examination may show a definite lagging of the barium meal at the cardia, but no dilatation of the esophagus. These attacks may be days, weeks or months apart.

The second stage is spasm with immediate food regurgitation. The patient feels a discomfort beneath the sternum, occasionally amounting to acute pain, with immediate regurgitation of food free from gastric juices. Relief is immediate upon emptying the esophagus, but usually the patient will content himself with a few sips of liquid until the next meal. At times the fluoroscopic examination will show a definite closure of the cardia if the barium is given in small amounts mixed with mucilage of acacia, but if taken in aqueous solution and large, rapidly successive swallows, the peristaltic action of the esophagus overcomes any tendency to spasm and the true condition will escape detection.

The third stage is spasm with varying degrees of dilatation of the esophagus, and regurgitation of food a few minutes to thirty-six hours after ingestion. The patient experiences a sense of weight beneath the ensiform, in the left hypochondrium or in the throat, and often is conscious that the food stops before reaching the stomach. Many learn that by taking a glass of water and closing the pharynx tightly while swallowing, they can force the food into the stomach. This can be accomplished only when moderate dilatation of the esophagus is present. Occasionally severe pain is experienced, simulating biliary colic, and unless definite information as to the character of the supposed vomitus is obtained, cardiospasm may not be suspected. When the dilatation has become extreme the esophagus may retain as much as two quarts of food.

### SYMPTOMS INDICATIVE OF CARDIOSPASM

Extreme weight loss is not common and dehydration not marked since the spasm seems to be intermittent and eventually allows food to enter the stomach.

Fluoroscopic examination in this stage is very characteristic. The regular walled dilated esophagus with the characteristic cigar-tip reaching to the cardia readily differentiates it from malignant or cicatricial obstruction, and a permanent record of the condition is readily obtained on the films.

Every patient with cardiospasm has some complaint referable to the ingestion or retention of food or pain or discomfort in the upper abdomen, beneath the sternum or in the throat, and when we obtain such a history we should think of cardiospasm. With this in mind we will be surprised to find that it is not such a rare entity.

### HYDROSTATIC DILATATION—INDICATED TREATMENT

The treatment of cardiospasm is spectacular and most satisfactory. Various drugs of the antispasmodic group have been tried with but little, if any, success.

In 1898 Russell reported six cases treated by hydrostatic dilatation. Four were cured, one partially relieved, and one not benefited.

Mikulicz in 1904 reported four cases treated by gastrotomy and retrograde dilatation with success in two. A few similar reports appeared about the same time.

Occasionally marked dilatation of the esophagus with a hook-like deformity of the cardia renders it impossible to get the guide string through the stomach and a gastrotomy has to be performed. Vinson reports two such cases.

*First Step in Dilatation Is Anchoring of Silk String.*—The first step in the treatment of cardiospasm, as well as in the treatment of any malignant or cicatricial stenosis of the esophagus, is to string the patient. Two yards of ordinary silk buttonhole twist is unwound from the spool and this point marked with ink. The thread, with the exception of about a foot, is rewound on the spool; the free end is wadded up and the patient instructed to swallow the string gradually so as to reach the ink mark by the following day. The spool is conveniently attached to the patient's clothing with a safety pin. An additional two yards is marked off to be swallowed the second day. When the string finds its way through the stomach it becomes anchored in the loops of the intestines and cannot be pulled out. Not infrequently the string is regurgitated or pulled out by the patient and must be started anew. At times several days are required before the string is securely anchored in the intestines, but a little patience will eventually be rewarded except in those rare cases with marked hooked-like angulation at the cardia.

When testing the string to determine whether or not it has become anchored, place the tip of the left index finger beneath the string, well back in the pharynx so traction on the string will not cut the base of the tongue.

*Passage of Olives.*—After the string is securely anchored, passage of olives attached to the whalebone staff is begun. Very little resistance to the passage of the olives is met at the cardia and occasionally it is well to view the passage of the olives with the aid of the fluoroscope, as it is important to determine the exact distance between the incisor teeth and the cardia. The frequent passage of the bougie accustoms the patient to the manipulation and makes the final passage of the dilator easier.

If there is much dilatation of the esophagus, requiring considerable tension on the string to guide the bougies into the cardia, it is well to tie to the silk buttonhole twist a fifteen-pound silk fish line and wait until this becomes securely anchored in the intestines before the dilator is passed. It is hard for most patients to swallow

the fish line unless preceded by the silk thread. The peristaltic action of the intestines pulls on the string and if kept loose at the mouth it readily goes down. After a proper string has been securely anchored and the patient sufficiently educated to the soundings, the dilatation is easily accomplished.

*Hydrostatic Dilatation.*—The pharynx may be swabbed with cocain though this is not necessary. A sheet is wrapped around the patient from the shoulders to the buttocks, securely anchoring the hands and arms. The patient is seated on a straight chair, his head securely held by an assistant, with the chin elevated and neck extended. Having previously determined the distance of the cardia from the incisor teeth, the dilator is introduced, the whalebone staff removed, and connection to the water line made. As the bypass tube is compressed, the bag distends. If it has not been properly placed in the cardia it will either slip down into the stomach or up into the dilated esophagus. By firmly holding the tube at the incisor teeth any shifting of the bag can be detected. The bypass tube is compressed until the gauge registers twenty-six to thirty feet of water pressure. Release on the bypass tube immediately allows the bag to collapse and the dilator is removed. The entire procedure from the time the dilator enters the mouth until it is removed requires less than sixty seconds.

Usually the patient experiences a rather sharp severe pain during the dilatation which is recognized as similar to the attack of pain produced by the spasm.

Immediately following the removal of the dilator the patient is able to swallow with complete freedom. Occasionally swallowing may be impaired one or two hours following the dilatation and this impairment may continue for forty-eight or seventy-two hours.

Some patients suffer sufficient pain to require one or two doses of morphin during the first twenty-four hours after the procedure.

One dilatation effects a permanent cure in over 60 per cent of the cases. Those who are not cured usually show symptoms within one to four weeks. Late recurrences are rare. I believe that the cause of recurrence within a few days or few weeks is due to improper placing of the bag in the cardia, for at secondary dilatations I have had patients say to me, "That felt different this time."

SUMMARY

Cardiospasm is not a rare condition. The most important thing in its recognition is to bear it in mind.

Hydrostatic dilatation, which can be done in the office, is the proper treatment, and one dilatation results in a permanent cure in over 60 per cent of the cases.

Medical treatment is not successful.

Medico-Dental Building.

DISCUSSION

GUNTHER W. NAGEL, M. D. (2000 Van Ness Avenue, San Francisco). — Cardiospasm is becoming more generally recognized, but the method of treatment described by Doctor Shephard which is so effective does not appear to be widely known.

A patient of mine illustrates this point. This young man had suffered from cardiospasm for seven years and during the last few years his life had become utterly miserable. He consulted numerous doctors, all of whom correctly made the diagnosis of cardiospasm but none of whom was able to afford this patient any relief. A single hydrostatic dilatation has given him complete relief for a period of over a year now. Other cases of mine illustrate the same point.

Cardiospasm can be confused occasionally with carcinoma of the lower end of the esophagus. In a few cases hydrostatic dilatation cannot be carried out successfully because of the tortuosity of the distended esophagus. In such cases operation is indicated with manual dilatation of the spasm through a gastrostomy opening.

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FREDERICK A. SPEIK, M. D. (800 Auditorium Building, Los Angeles). — Doctor Shephard's paper is timely and will direct attention to this rare and interesting condition.

The name itself is misleading; it should be "lower esophageal spasm." Nurses and many doctors think of the heart when we speak of cardiospasm.

Many physicians are unaware that spasm of the lower end of the gullet leads to true pathology such as ring-like hypertrophy of the muscles at the cardia, and true pouch formation.

Many cases are not diagnosed because the symptoms are confusing. The two chief symptoms are:

1. Regurgitation of large quantities of mucus; and
2. Difficulty in swallowing liquids.

The diagnosis may be confused with obstruction at the outlet of the stomach as well as carcinoma of the esophagus. Correctly diagnosed, it yields rapidly to proper treatment. Being a disciple of Sippy, we use the air pressure bag, which gives uniformly good results.

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## CHRONIC EMPYEMA: NONTUBERCULOUS*

REPORT OF CASES

*By* CHARLES D. LOCKWOOD, M. D.
*Pasadena*

DISCUSSION *by Charles M. Fox, M. D., San Diego; Emile Holman, M. D., San Francisco; Clark L. Abbott, M. D., Oakland.*

THE problem of chronic empyema still presents many difficulties and there is no standardized procedure applicable to all cases; each must be individualized. I believe, however, that every case of nontuberculous empyema can be soundly healed by judicious and persistent treatment.

The first step in every long-standing case of pleural suppuration should be a most painstaking study to determine the location and dimensions of the empyema cavity, the expansibility of the lung, the existence of pleurobronchial fistulae and the nature and virulence of the organism. The general condition of the patient should also be considered in deciding upon the extent and type of operation to be undertaken. Most of the patients suffering from long-standing empyema have damaged kidneys and hearts and do not tolerate long and shocking operations. I formerly used

* Read before the General Surgery Section of the California Medical Association at the sixtieth annual session, San Francisco, April 27-30, 1931.

Beck's paste to outline the cavity for x-ray study, but since the introduction of iodized oil I have found this medium less toxic and equally efficient. Stereoscopic anteroposterior and one or more lateral position roentgenograms are taken.

Many patients come to southern California and the Southwest with chronic discharging sinuses or wearing drainage tubes in empyema cavities of long standing. These patients are sent in the hope that the climate and open-air life will heal their chests. They have usually undergone two or three operations and have finally been condemned to wearing drainage tubes indefinitely. It is often difficult to gain the confidence of these chronic sufferers and induce them to make another effort at healing. Many of them will heal promptly if only the tube is removed and left out, but having worn their tubes for months or years they are loath to part with them and are often terror stricken at the suggestion.

In addition to the numbers which will heal on removal of the tube and daily cleansing of the cavity, there is another large group in which the drainage is poorly placed or inadequate; often there is a residuum of from four to six ounces of pus in the bottom of the cavity which drains intermittently or only when the patient is recumbent. A large percentage of these can be healed by adequate dependent drainage and frequent irrigation with Dakin's solution.

Before undertaking any extensive operation to obliterate an old empyema cavity, thorough drainage is secured and the patient's resistance raised by eliminating sepsis. After all of the simple measures have been tried, however, and the resistance raised to the maximum, there still remains a small group of cases which require some radical surgical procedure. I wish to report briefly five such cases and illustrate the method employed in their treatment.

## REPORT OF CASES

Case 1.—A. B. Case No. 5339. This patient, twenty-three years of age, came to California with a discharging sinus of three years' duration. Empyema had followed pneumonia. The sinus was drained by a simple rib resection and, after more than two years of drainage, five ribs were resected. There was some improvement but the sinus persisted. He came to California hoping to be cured by the climate. At this time I saw him. X-rays taken at this time, after the injection of bismuth paste, revealed a cavity in the posterolateral aspect of the chest about six inches in length and one inch in width. It was separated from the partially expanded lung by a dense membrane. The cavity extended upward and downward about equidistant from the constricted opening in the chest wall. A second injection of bismuth paste two weeks later showed the cavity almost double the size it was on first examination. When completely filled, foul smelling pus would well up from the bottom of the cavity. There being no improvement, operation was decided upon.

*First Operation.*—Ninth, tenth, and eleventh ribs were resected in the posterior axillary line, exposing the bottom of the cavity which rested upon the diaphragm. Great improvement followed this improved drainage, but the sinus continued to discharge after prolonged drainage and irrigation with Dakin's solution. After six months' treatment a second operation was done.

*Second Operation.*—Cavity was exposed by resection of previously removed ribs. The thickened pleura was excised and dense bands of adhesions divided. The lung was liberated by decortication. All communicating sinuses were obliterated. Prolonged drainage and irrigations with Dakin's solution again failed to secure healing. After eight months, sinuses still persisted.

*Third Operation.*—Cavity was widely exposed. The lung was decorticated but would not expand. Two large pedicled skin flaps, one above and one below, were dissected up from the chest wall, turned into the cavity and sutured to thickened visceral pleura; the chest was left widely opened and packed with iodoform gauze. The cavity was packed daily and rapidly granulated. The skin pushed in from the edges of skin flaps and in about six months the cavity was entirely lined with epithelium. All discharge had ceased and the patient was restored to perfect health. He has remained well up to the present time, four years after the last operation.

* * *

Case 2.—Dorothy H. Case No. 6855. This girl, twenty-three years old, had pneumonia at the age of eleven, followed by empyema, which was drained. The sinus healed and remained closed for one and one-half years when the cavity refilled, and was again opened. After this operation it remained healed for three years, but again reopened and has alternately opened and closed at periods varying from three or four months to a year. She had been operated upon five or six times with short periods of relief. In 1922, six months before I saw her, after a brief closure, she suddenly began to expectorate foul pus. She continued to expectorate eight ounces daily, with intermittent drainage from a sinus in the left side at the level of the sixth rib. Her general condition was fairly good but she was harassed by a constant cough and by the offensive odor, which was noticeable to everyone. Four operations were required to cure her.

*First Operation.*—Resection of rib was done at the site of the old sinus. A large empyema cavity was exposed by the Tuffier rib spreader. Thick cicatricial membrane covering lung was incised and partially removed, liberating the lung at site of pleurobronchial fistula. A pucker string of chromic catgut was placed about the fistulous opening. The pleurobronchial fistula remained closed and the patient's cough ceased. The empyema cavity continued to discharge and two months later another attempt was made to close the sinus.

*Second Operation.*—Five ribs and the angle of the scapula were resected, and the cavity was widely exposed. Thickened pleura was dissected off the lung as far as was possible, since the cavity extended up to the apex of lung and was very inaccessible. Three large pedicled skin flaps were implanted into the bottom of the cavity, the chest left wide open and packed with iodoform gauze. After the operation the patient rapidly improved and gained in weight. The cavity was dressed for many months and it was necessary to do two subsequent operations with implantation of skin flaps to secure complete epithelialization of the visceral pleura. The patient has now been well for four years and is pursuing her profession as a teacher of art.

* * *

Case 3.—Mrs. M. C. Case No. 6570. Empyema was secondary to lung abscesses. This was a patient referred by Dr. C. C. Browning of Los Angeles for an abscess of the left lung. Six years previously she had suffered from tuberculosis of her right lung which had healed. The development of her abscess can be followed in the x-ray films from its inception until its rupture into the pleural cavity, with the complete filling of the pleural sac with pus. The pus finally broke through into a bronchus and the patient expectorated from four to six ounces of fetid pus daily. She was septic and emaciated. The first operation,

done in Tucson, Arizona, consisted of the resection of the eighth rib in the posterior axillary line and the drainage of a thick-walled abscess the size of a hen's egg in the left lower lobe. Improvement followed but there was a continuous discharge of foul pus, both by mouth and through the drainage tube. There were periodic "floodings" of pus, when several ounces would discharge simultaneously through the bronchial fistula by mouth and through the drainage tube. Following these periods the temperature would drop and the general condition would improve.

*Second Operation.*—The seventh rib was resected from the costocartilaginous junction to the costovertebral angle and the cavity in the lower lobe exposed. It was found to consist of several compartments, the uppermost of which communicated by a funnel-shaped opening with a much larger cavity in the upper lobe. The latter occupied almost the entire upper lobe and communicated with a bronchus. These findings explained the periodic floodings of pus. A large drainage tube was passed through the lower abscess into the upper one. This gave perfect drainage. Rapid improvement followed with greatly diminished expectoration. The chest sinus persisted.

*Third Operation.*—At Pasadena Hospital the lung was freed from the chest wall, the fistula dissected out, swabbed with two per cent gentian violet in 70 per cent alcohol and closed with a pucker string of chromic catgut. The chest was closed, leaving only a Penrose drain in the posterior angle. The chest sinus healed but the patient continued to expectorate one or two ounces of pus daily with occasional exacerbations of temperature. She regained her normal weight, married and gave birth to a healthy baby. She continued to have periodic attacks of fever with increased sputum. X-ray films after lipiodol injection revealed a persisting abscess in the left lower lobe.

*Fourth Operation.*—After thoracoplasty, with resection of five ribs, from fifth to tenth, the patient has further improved but still has thirty to sixty cubic centimeters of sputum daily with occasional rise in temperature. She is practically well and attends to her household duties, but further lung collapse will be required to obliterate the old abscess cavity.

* * *

Case 4.—Mr. C. F. Case No. 5461. This man had had an interlobar empyema following lobar pneumonia. The patient first presented a simple effusion which became purulent after two weeks of normal temperature. Closed drainage with a catheter gave temporary relief with normal temperature. In two weeks the temperature again rose to 104 degrees. X-ray films showed an interlobar collection of pus at the level of the sixth rib. This was drained by resection of the seventh rib in the anterior axillary line. X-ray film shows the catheter tube in the abscess, with a new abscess forming higher up to inner side of the lung apex and near the mediastinum. Temperature which had dropped to 101, again began to rise and another x-ray picture one week later showed a well developed abscess near the mediastinum.

The eighth rib and a portion of the seventh were resected and the chest cavity was exposed so that the hand could be passed up over the apex of the lung to the mediastinal abscess. Two ounces of fetid pus were thus evacuated and a large tube introduced. After this operation the patient rapidly improved, temperature returned to normal and he made a complete recovery.

* * *

Case 5.—Mr. H. L. A. Case No. 5517. This man while in the army in France in 1918 suffered from acute pleurisy with effusion. He recovered from this and after six weeks was sent to the front. He was wounded. Several fragments of shell perforated the right thoracic cavity and one fragment entered the left pleural cavity. This fragment was thought to have entered the pericardial sac and a pericardotomy was done. The fragment was found to be posterior to the pericardium. Empyema developed on the right side, and was drained. He was in bed for twenty months and in a very critical condition when he was brought back to the United States. Tubercle bacilli were reported in the sputum during his stay in the army hospital. He developed a bronchial fistula and continued to drain from a sinus in the posterior axillary line at the level of the tenth rib, right side. Another sinus anterior and a little above the main one also drained intermittently. On the left side the apex beat of the heart could be seen and felt at the level of the sixth rib, which had been resected. Patient was greatly emaciated and could get about with difficulty. The ribs on the right side from the fifth to the eighth were overlapping, firmly ankylosed and almost perpendicular. X-ray films after injection of the sinus with lipiodol showed a cavity two by four centimeters communicating with a similar cavity more external. The picture shows the lipiodol entering a bronchial fistula from which it was aspirated into the left lung, which appears normal.

*Treatment.*—The fifth, sixth, seventh, and eighth ribs, which were ankylosed to one another and to the angle of the scapula, were resected by means of a Gigli saw in one piece. This permitted the cavity to collapse. Both the sinuses and the bronchial fistulae promptly closed and have remained closed. Patient's general condition is much improved.

*Comment.*—We are now doing a modified thoracoplasty for these long-standing cases of empyema instead of the skin flap method. Several ribs are resected well back toward the paravertebral line, and as many ribs as necessary to secure obliteration of the empyema cavity are resected. This is not so certain a cure, but it leaves less scar and is a simpler procedure.

65 North Madison Avenue.

DISCUSSION

Charles M. Fox, M. D. (910 Medico-Dental Building, San Diego).—Doctor Lockwood has presented a very interesting group of cases and in the detailed reports has clearly demonstrated his ideas of the proper handling of these patients. As he states, most of the cases of nontuberculous chronic empyema are due to faulty or inadequate care in the early stages. The operation of draining the pleural cavity is regarded as such a simple procedure that almost anyone feels competent to perform it. Among general practitioners as a whole there is no clear understanding of basic pathology and no clear understanding of the methods to be employed in the individual case. An opening through which pus will drain is often regarded as sufficient. The question of open or closed method, irrigation, removal of tubes, blowing exercises, etc., all most important, are neglected. My experience with patients coming to California on account of this condition closely parallels that of Doctor Lockwood's. Frequently removal of the tube with or without blowing exercises is all that is necessary for a cure. In persistent cases I have used skin flaps many times after failure of the lung to expand and meet the chest wall. Dr. Emil Beck, formerly of Chicago, now living in Berkeley, first brought this method to the United States from Brauer's Clinic many years ago—I believe around 1912—and while it clearly seemed to fill a long-needed want the method was not used extensively until some time later. More recently I have done as Doctor Lockwood has described and have used instead of the skin flap method a thoracoplasty, making a sufficiently extensive resection to produce the desired result. This can be done easily, quickly, and with relative safety. If the general practitioner can be made to realize that early intelligent treatment is necessary in this frequent complication and that a little extra study during the acute period will be rewarded by a prompt recovery, the need for extensive surgical procedures will be nil.

EMILE HOLMAN, M. D. (Stanford University Medical School, 2398 Sacramento Street, San Francisco).—Doctor Lockwood's instructive cases illustrate beautifully the principles underlying the cure of a chronic empyema. When not associated with a bronchial fistula or the retention of a foreign body, such as a drainage tube, the cavity of a chronic empyema fails to heal because its walls are composed of rigid tissues which cannot collapse. An abscess cavity in the soft parts of the thigh heals because its walls collapse and can adhere to each other from the bottom up by the deposition and contraction of fibrous tissue. In a chronic empyema a rigid chest wall forms one wall of the cavity, a thickened and rigid visceral pleura forms the inner wall of the cavity and often an excessively thickened and rigid parietal pleura merges with the visceral pleura to form the top and sides of the cavity. The rigidity of these various structures prevents collapse of the walls of the abscess cavity, and the enclosed pleural space continues to form and discharge pus. This space has been termed a "dead space" and corresponds accurately to the "dead space" in an osteomyelitic cavity which, too, persists as a chronic process because its walls cannot collapse.

To obliterate such a pleural dead space, either one of two things must happen: (1) the lung must be liberated by removal of the thickened visceral and parietal pleurae resulting in a reëxpansion of the lung and reapproximation of the walls of the cavity; or (2) the rigidity of the chest wall must be eliminated by resection of its bony structures, the ribs, and the thickened parietal pleura. These two latter procedures must be sufficiently extensive to permit the chest wall to cave in and become adherent to the visceral pleura. Prompt healing occurred in two of Doctor Lockwood's cases when skin was applied directly to the visceral pleura. In planning operations for the cure of a chronic empyema, it is highly important to provide for complete collapse of the walls of the abscess cavity by an adequate removal of the overlying ribs and thickened pleura.

It should also be borne in mind that in the treatment of acute empyema the development of such a dead space with rigid incollapsible walls should be avoided by (1) complete and dependent drainage and (2) reëxpansion of the lung before it is moored in place by excessively thickened visceral and parietal pleurae, a thickening which in the first place is usually the result of pooling of pus incident to imperfect and inadequate drainage.

The presence of a bronchial fistula in addition to the chronic empyemic cavity requires a more extensive mobilization of the chest wall by resection of ribs not only immediately overlying the empyemic cavity, but also of one or more ribs adjacent to the cavity, permitting relaxation of the thickened pleura that moors the walls of the bronchus to the chest wall. The healing of a bronchial fistula depends upon sufficient relaxation of the fibrous tissues holding the bronchus open to permit closure by cicatricial contraction, which is the normal process of repair. This required relaxation is dependent usually upon an adequate mobilization of the chest wall.

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CLARK L. ABBOTT, M. D. (622 Wakefield Building, Oakland).—Doctor Lockwood has contributed another very instructive paper to the subject of thoracic surgery, in which he has been so deeply interested, and has added so much to our available knowledge in the rapid advancement of its surgical technique.

The paper is intended in most part as a portrayal of a series of diverse clinical conditions and the use of extremely good clinical understanding, surgical judgment. and skill. However, much is said in a few introductory words, and the subject demands a thorough understanding.

There is no field of surgery with a wider clinical, pathological, and surgical diversity of conditions. The surgeon must accurately gauge his patient's margin of safety. The etiology of the pathology present must be carefully investigated and a most detailed examination made by all modern methods so as to obtain all possible knowledge of extent, direction, location of the cavity or fistula, and the structures involved. The objectives are safety, restoration of vital capacity, and healing of the wound with a minimum of deformity.

I feel we must be somewhat guarded in the statement, frequently heard, that our chromic empyemas of today are due to improper treatment. We know that it has been the conservative treatment of the past that has let the acute empyemas become chronic empyemas, but it has also materially lessened the death rate.

After preparatory treatment by sodium luminal and morphin sulphate, anesthetize with novocain, blocking the regional nerves with local infiltration, and using as little gas or ether as is needed. During operation, observation by a competent assistant of the patient's respiratory and circulatory equation is needed, the anesthetic always being stopped at a systolic pressure of ninety millimeters. The various steps in an operation are the following:

Adequate incision for good drainage;

The removal of all foreign bodies such as bone sequestrum of involved ribs or possible débris of former treatment or injury;

Cauterization or ligature invagination of bronchial fistulae;

Sterilizing and chemical decortication with Dakin's solution or gentian violet.

Possibly blood transfusions from a convalescent patient. The Empyema Commission has stated that their very large series showed 100 per cent *Streptococcus hemolyticus* infections with whatever other bacteria that may be present.

Then follow by the most energetic postoperative general hygienic measures. To obtain pulmonary expansion bottle blowing is usually instituted. I have found, however, that coughing under guidance is more effectual.

Under this procedure most patients will be cured and many of the others will show great reduction in size of cavity and a much better prepared patient for further procedure.

Doctor Lockwood in detailing the steps of the radical operations depicted has shown an open mind. Principles and not methods guided him. He drained hidden cavities; closed bronchial fistulae; decorticated the nonexpanding lung; collapsed the chest wall; after which soft tissue was implanted and, when necessary, direct epitheliazation obtained. He obtained most excellent results. He did multiple operations whenever advisable in the interest of safety.

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DOCTOR LOCKWOOD (Closing).—I am indebted to the discussers for their elucidation of some points not covered in my paper. Doctor Fox emphasizes the importance of intelligent treatment in the acute cases as a means of avoiding later deforming operations, I fully agree with his statements.

Doctor Holman in his usual concise manner has made clear the mechanics involved in the chronic empyema cavity and has shown how the obstacles are to be overcome. Both in the obliteration of old empyema cavities and in compression of the lung for tuberculous cavities and the various types of pulmonary suppuration, nature has pointed the way in the increased obliquity of the ribs, the depressed intercostal muscles, and the displacement of the heart by adhesions. Doctor Abbott has brought out the important rôle played by the *Streptococcus hemolyticus* in empyema and the importance of conservatism in this type of case. During the war I observed many hundreds of these cases and saw the disastrous results which followed early drainage. As my paper dealt only with the chronic cases, I did not attempt to discuss the treatment of the various types of acute empyema.

# TYPHOID-PARATYPHOID VACCINE IN OCULAR INFLAMMATIONS*

## REPORT OF CASES

*By* HAROLD F. WHALMAN, M. D.
*Los Angeles*

WHILE the use of typhoid-paratyphoid inoculations as well as the use of other foreign proteins in the treatment of local inflammatory conditions is not at all a new subject, it was felt that the presentation of the following eye cases treated by the intravenous use of typhoid-paratyphoid vaccine was justified from the standpoint of stimulating local interest in this valuable therapeutic measure.

### COMMENTS ON THE LITERATURE

Ichiwaka, Kraus, and Gay treated typhoid patients with typhoid vaccine injected intravenously and observed a sudden drop of temperature and frequent improvement in the general condition of the subject. Miller at Cook County Hospital gave two thousand injections in cases of typhoid and various other conditions with improvement. Peterson also made observations of this sort, and soon various substances were tried, including albumoses, leukocytic extract, gonococcus vaccine, normal serum, etc.

In 1912 Wagner von Jauregg of Vienna noted that patients with general paresis were benefited by attacks of intercurrent disease, and found that tertian malaria was the most promising with its intermittent swing of temperature.

Müller and Thanner then tried milk injections in gonorrheal ophthalmia and observed a distinct benefit from this treatment. It was noted that milk injections were quite specific in acute inflammations of the conjunctiva, but not so decidedly effective where the deeper structures of the eye were involved.

The most outstanding and convincing work in the use of foreign proteins in the treatment of eye diseases, both as to results and methods of use, was accomplished during 1919 to 1927 by Harvey Howard, who was then in charge of the department of ophthalmology at Peking Union Medical College. He made use of dilutions of typhoid-paratyphoid vaccines and injected them intravenously.

### TECHNIQUE OF INJECTIONS

The dilutions were made by taking stock typhoid-paratyphoid vaccines and diluting them in the following manner: To one cubic centimeter of vaccine add nine cubic centimeters of normal saline. This may be called solution No. 1. To one cubic centimeter of solution No. 1 add nine cubic centimeters of normal saline. This is solution No. 2, which is a 1-100 dilution of the stock vaccine. The stock vaccine contains per cubic centimeter:

1,000,000,000 killed typhoid organisms
750,000,000 killed paratyphoid A
750,000,000 killed paratyphoid B

which equals 2,500,000,000 organisms. Hence, one cubic centimeter of solution No. 2 contains 25,000,000 organisms. The initial dose for an individual of 150 pounds in fair general health is 25,000,000 organisms. One cubic centimeter of solution No. 2 is diluted with sufficient normal saline to make five to ten cubic centimeters of solution for injection. The final solutions, as well as the stock solutions, must at all times be clear and free from contaminations. Solutions No. 1 and No. 2 can be kept on ice for a time, seldom over two weeks.

### REACTIONS

*Systemic.*—About one-half hour to one hour after injection the patient develops a chill. During the chill there is a lowering of the systolic blood pressure and a rise in the diastolic. There is also a leukopenia. Within the next two to three hours, the temperature rises to 101 or 103, occasionally to 104 degrees; there is a leukocytosis; the blood pressure returns to normal. The peak is generally reached about four or five hours after injection. Then there is a drop of about an average of one and one-half to two degrees in about two hours, followed by a slow secondary rise and a fall by lysis within twenty-four hours, occasionally lasting forty-eight hours. The leukocytosis and the relative increase of polymorphonuclear cells varies directly as the temperature. The interval between doses depends upon the result obtained; generally a three-day interval is selected, but temperature should be normal before repetition.

*Focal.*—Howard points out that in the intravenous use of typhoid a focal reaction of the diphasic type such as is observed when milk injections are given intermuscularly is not present, or at least is practically inconspicuous, and this has been our observation in most of the cases.

*Results.*—Howard presents sixty-two cases of great variety, including acute and chronic inflammations of the uveal tract, various forms of keratitis, corneal ulcers, retrobulbar neuritis, gonorrheal ophthalmia, traumatic cataract, vitreous opacities, with improvement in all but one case of corneal ulcer, one case of chronic iridocyclitis, and in those cases of optic atrophy which he treated.

### THEORIES OF ACTION

There are undoubtedly several factors responsible for the improvement:

1. We know there is an increase of the blood antibodies.

2. There is a fever produced, and we know that for the gonococcus the optimum temperature is 36.5 to 37 degrees centigrade for cultures. A sudden rise to 39 degrees centigrade results in death of the culture.

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* From the Eye Services of Doctors George H. Kress, George W. McCoy, and William A. Boyce at the Los Angeles County General Hospital, Unit No. 1. Reported with their permission.

* Read before the Eye and Ear Section of the Los Angeles County Medical Society, May 5, 1930.

3. There may be a sudden flooding of the lymph spaces by antibodies after the permeability of the capillaries has been increased following a protein shock.

4. The leukocytosis is probably an important factor.

5. The opsonic index of the blood is raised.

6. There is no direct action on the causative agent as with specific antitoxins, but there is an indirect stimulation producing a pronounced action of the body defense mechanism.

At the Los Angeles General Hospital we have treated twenty-one cases during the past eighteen months by the method outlined above. We do not use it routinely, perhaps not even so often as we might, but have reserved this measure for those cases in which we feel the eye is dangerously involved. Some of the patients had been treated for several weeks by other physicians, who had used the usual local measures without success.

REPORT OF CASES

Case 1.—A white, male, age seventy-three. Admitted April 30, 1929, complaining of itching, burning, tearing, photophobia and pain in eyeball for six months. He was treated at a local clinic for two weeks, became worse and was then referred to Los Angeles General Hospital, where a diagnosis of acute exacerbation of chronic trachoma with pannus on both corneae and some erosion of epithelium on the right. The tarsal plates were scarred and atrophied. The Wassermann and Kahn tests were four plus. Local treatment for the eyes and general treatment for lues were instituted. For six days no improvement was noted, so it was decided to start him on the nonspecific protein therapy. In the first injection 25,000,000 organisms were given intravenously. There was a good general reaction, but the local condition remained stationary. Five days later 40,000,000 bacilli were injected and there was a good reaction systemically, but no local improvement noted until three days later, when they appeared to be much improved. Again they remained quite stationary for about four days and a third injection was given, 80,000,000 organisms. This was followed by rapid improvement, and eleven days later the acute pannus had receded, leaving only the atrophic vascular remains. The patient was discharged seven weeks after entry with condition arrested.

* * *

Case 2.—White, male, age forty-nine, had a cataract extraction by the combined method, left eye, on March 28, 1929, and six weeks later developed an acute phlyctenular keratitis. General examination was negative, tonsils had been removed, sinuses were negative, no focus could be found. Here 25,000,000 organisms were given intravenously and the next day there was marked improvement. He was discharged a week later with condition arrested.

* * *

Case 3.—White, female, age forty. This patient gave a history of having been hit in right eye with an olive pit three weeks previously. Stated that she had no symptoms until two days before coming to clinic, when her vision began to blur. Examination showed an area of deep infiltration in the center of the cornea; the iris was dull and there was marked circumcorneal injection. Local treatment was instituted and the same day 25,000,000 typhoid-paratyphoid organisms were given. There was improvement in the inflammatory reaction the next day, and the case progressed slowly. Five days later 50,000,000 organisms were given. Reaction was rather severe, and patient suffered considerable headache. Her temperature reached 104. The third injection was, therefore, cut to 75,000,000 instead of doubling the previous dose. The patient was discharged shortly after the third injection with inflammation subsided, and some remaining opacity.

* * *

Case 4.—White, male. Six weeks previous to entry he incurred a corneal abrasion of his right eye from a fall through an orange tree. He was treated by a local eye, ear, nose, and throat physician since the day of his accident, but condition slowly became worse. The right eye contained some thin stringy mucous secretion; there was chemosis of the bulbar conjunctiva. The vessels in the lower quadrant extended to the margins of a deep crescentic corneal ulcer which was about three millimeters at its greatest width and six millimeters long. In the center it had eroded to Descemet's membrane, which glistened through a place about 1.5 millimeter in diameter. The remainder of the cornea was opaque and rough, obscuring details of anterior segment of the eye. Vision was restricted to form perception. Local treatment was instituted; morphin was necessary to control pain. A conjunctival flap was advised, but patient refused, so he was started on a course of typhoid-paratyphoid injections. About 25,000,000 organisms were used for the first injection and the next day the chemosis of the bulbar conjunctiva had receded, and the pain was greatly reduced. Three days later 50,000,000 organisms were given. The ulcerated area was very thin, but not perforated, and the epithelium was beginning to grow over. A third injection was given following which the area completely healed and the depression soon began to fill in. Subsequent local treatment with dionin and yellow oxid of mercury finally resulted in clearing of the cornea to the extent that 20/50 vision had been restored at the last visit.

* * *

Case 5.—White, female, age seventeen. This patient had a shallow ulcer, 1.5 millimeter in diameter, located in the pupillary area of the right eye. She was treated with the thermophore at 150 degrees Fahrenheit for one minute and the ulcer healed. She returned five months later with an area of deep infiltration in center of cornea which had broken down and ulcerated. It was thought too deep for the thermophore, so typhoid vaccine, 25,000,000 organisms, was given and the accompanying inflammatory signs began to clear. Three days later 40,000,000 organisms were given. The ulcer was curetted to Descemet's membrane, a pressure bandage applied, and the lesion healed.

* * *

Case 6.—White, male, age sixty-nine. The patient stated that he was struck in the right eye with a tree limb three weeks previous to entry. He had been treated during this time by another physician, without relief. Examination revealed a dilated pupil with incarceration of the iris, and dislocation of the lens downward into the vitreous beyond the ciliary body. The eye was sensitive to light and very painful. The tension was minus two; general examination was negative. He was given 25,000,000 organisms and the next day his photophobia and pain was decreased. He was discharged with a quiet eye, but the vitreous was full of opacities of the heavy stringy variety.

* * *

Case 7.—White, male, age twenty-three. Presented himself for examination, complaining of photophobia, lacrimation, and a feeling of tenseness in the eye for two days. The pupil was small and spastic; the iris was dull; the circumcorneal vessels were injected. The vitreous showed some faint opacities. A diagnosis of acute uveitis was made, local treatment instituted, and 25,000,000 organisms were given. The

temperature reached 104.4 degrees and the patient complained of headache, insomnia, and backache so pronounced that morphin was given to put him at rest. The next day the eye was greatly improved and in seven days local treatment was discontinued. An infected tonsil tag, the only focus found was subsequently removed. There has been no recurrence in one year.

* * *

Case 8.—White, male, age twenty-three. Admitted with an acute follicular conjunctivitis. Smears were negative for bacteria. He had been treated for one month without improvement. The first injection of typhoid organisms resulted in improvement and two more completed resolution of the process without local treatment other than atropin and soothing ointments.

* * *

Case 9.—White, male, age nineteen. This patient suffered a severe ulcerative keratitis involving both corneae: one lesion on right cornea, four millimeters in diameter; three ulcers on left cornea, two to three millimeters in diameter. Dense infiltration and panus surrounded the lesions. General examination negative except for chronic tonsillitis. Treated locally, tonsils were removed and there was marked improvement, but resolution was slow, so two injections of typhoid vaccine were given and in five days healing was complete. He was discharged with a visual acuity: 20/40, right eye; 20/100, left eye.

* * *

Case 10.—White, male, age forty-one. This patient had a case of old trachoma with corneal ulcer in left eye. He was given four injections of typhoid vaccine intravenously, and the ulcer healed.

* * *

Case 11.—White, female, age thirty-eight. This patient was operated for an old, tough capsular cataract, the result of a penetrating injury with a needle during childhood. The operation was followed by a low-grade iritis, which was treated with atropin locally and salicylates internally. Progress was slow, so patient was given 25,000,000 organisms and after a good systemic reaction the eye quieted in a few days.

* * *

Case 12.—White, male, age twenty-eight. He was admitted to the hospital with an old trachoma; tarsal cartilages had been removed. On admission he had a subacute pansinusitis with flare-up of the eyes. He was undernourished; Wassermann was negative; dental examination was negative. He was started on a series of injections with immediate improvement after first injection and arrest of eye condition after third injection. Treatment of the pansinusitis was under way after second injection and continued for some time after. He returned to the eye clinic in five months with another acute exacerbation of eye condition, recurrence of panus, and a corneal ulcer. Another course of intravenous injections of the vaccine was given, a series of five being required before the condition was arrested. The ulcer was healed after the second injection. The eyes have been quiet for six months.

* * *

Case 13.—White, female, age fifty-four. A debilitated little old woman, trephined two years previously, came in with a late infection of the operated eye, consisting of an iridocyclitis with secondary elevation of the intra-ocular tension. A series of intravenous injections was started. Two treatments showed that this method was impracticable. She was emaciated and the fever produced burned up what reserve she had, resulting in increased general weakness and no response from the debilitated tissues to stimulation. Hence there was no improvement whatever in her eye condition after two injections and the treatments were discontinued because of this and her general condition. An attempt was made to improve her nutrition, with some success, and a second series was tried, starting with 12,000,000 organisms, but two injections sufficed to show that she could not stand further fever reactions. A trephine was done below and the facilitated lymph flow improved the condition temporarily, but in four weeks exudation increased and filled the pupillary area.

* * *

Case 14.—White, male, age thirty-eight. This patient was admitted with inflammation of the left eye, consisting of marginal blepharitis, chronic conjunctivitis, and a marginal crescent-shaped ulcer on the temporal side, measuring six millimeters in length and three millimeters at its greatest width. General examination was negative except for chronic tonsillitis. He was given the usual dose of typhoid vaccine the day of his admission, and improvement was noted the next day. In five days the ulcer had healed without further vaccine therapy. His tonsils were then removed. In two months he returned with a recurrence, and after two injections the ulcer was healed with no recurrence in the past three months.

* * *

Case 15.—White, male, age twenty-seven. A large central ulcer, six millimeters in diameter with a circle of infiltration which stained by absorption, occupied the center of this man's cornea. Local medication was started and a day later the typhoid vaccine was given; three days later a second injection, and in three days more the ulcer was healed. There has been no recurrence in one year's time.

* * *

Case 16.—White, male, age sixty-two, in excellent health. Several weeks following a cataract operation a low-grade uveitis developed, the vitreous slowly filled with small opacities and finally a secondary glaucoma developed. All possible foci of infection had been taken care of previous to operation and no further evidence could be found. A series of typhoid injections were given, without improvement.

* * *

Case 17.—White, male, age forty-five. In this man an old trachoma flared up, complicated by a small corneal ulcer. One injection sufficed to heal the ulcer, and local treatment was continued for the trachoma. In eight months he had a recurrence with a large, deep ulcer, about three millimeters in diameter, with anterior synechea. Two injections of typhoid were given and the ulcer healed, with an adherent leukoma as the end result.

* * *

Case 18.—Colored, female, age nineteen. This patient came to the hospital with both corneae involved. The right was deeply infiltrated and there were several small ulcers on the surface. The left cornea was infiltrated, but none of the areas had broken down to ulceration. She was hospitalized and given 25,000,000 organisms. Her temperature reached 103. The next two days showed a very striking improvement in her condition. After two injections the ulcers had healed and the inflammation almost entirely subsided. A third treatment was given and the patient was discharged with the condition arrested.

* * *

Case 19.—White, male, age sixty-two. In this man striate keratitis persisted for fifteen days after cataract extraction and did not show signs of improving,

so 15,000,000 typhoid organisms were given intravenously and in two days the cornea cleared. His visual acuity or refraction was 20/30.

* * *

CASE 20.—White, male. This patient suffered a persistent marginal blepharitis complicated by a secondary pyogenic infection, and superficial keratitis in left eye. He was treated locally for two weeks and finally 25,000,000 of typhoid organisms were given and the inflammation subsided in three days.

* * *

CASE 21.—Colored adult female. To approximate a lacerating wound of the upper lid, linen stitches had been used on skin and conjunctival surfaces, and abrasion of the cornea followed by infection and ulceration with hypopyon resulted. She was given 25,000,000 organisms; the cornea healed and the hypopyon absorbed within a few days.

INDICATIONS (FOUND EFFICACIOUS, ACCORDING TO HOWARD)

1. Acute or subacute infections of the conjunctiva when the disease was unusually severe or prolonged.

2. Ulcers of the cornea and all forms of keratitis.

3. Uveitis, iridocyclitis, and iritis, no matter what cause, with the exception of tuberculosis.

4. Optic neuritis, especially the retrobulbar type and those apparently due to focal infection.

5. Edema of the retina, retinal hemorrhages; and exudative chorioretinitis.

6. Hemorrhages and exudates from the retina or choroid into the vitreous; also acutely developing vitreous opacities, particularly those of the massive dust-like type.

7. The absorption of soft lens material following traumatic cataract or discission of a congenital cataract, or following a cataract extraction in which considerable lens substance was left behind.

8. Penetrating wounds of the eye in order to prevent endophthalmitis or panophthalmitis (an exceedingly important use).

9. Secondary glaucoma, to reduce intra-ocular tension, especially when associated with an inflamed iris and a turbid aqueous.

CONTRAINDICATIONS (*Howard*)

1. The presence of more than one-half degree centigrade of temperature above normal.

2. Low vitality.

3. Any condition in which the added strain occasioned by a protein shock might not be well borne by the heart.

727 West Seventh Street.

COMMENT

It is to be emphasized that the method is not curative and does not relieve us of the obligation of eliminating foci of infection, nor are we justified in neglecting such local treatment as the case may require, such as atropin, antiseptics, ointments, etc. Subsequent local treatment may be required.

## MEDICAL MILITARY PREPAREDNESS*

*By* THOMAS W. BATH, M. D.
*Reno, Nevada*

ONE year ago a brief report was made and some instances of medical military unfitness that this Government experienced in the World War were cited.

Today, following considerable correspondence with such men as the editors of the *Military Surgeon,* of *Foreign Service,* of the *American Veteran,* of *American Legion,* and of the *Journal of the American Medical Association,* and with Colonel Taylor, editor of the *Texas State Medical Journal,* and with the Surgeon-General of the United States Army, I think I have a few more practical ideas to place before you on the important matter of medical military preparedness.

Prior to America's entrance into the World War, sensing the coming storm, a General Medical Board was created and competent men appointed whose duty it was to make a general survey of medical men, hospitals, and medical equipment. Also some fifty medical societies were called upon to suggest specialists for work along their lines.

While this committee did everything in its power to make medical preparation for war, the time was too limited to work the medical personnel of a nation into an organization that could promise much results. The creation of a Medical Officers Reserve Corps in 1910, of which I became a member in 1911, created one rank only, that of first lieutenant. But there was no effort made to train these Reserve Corps officers, and matters simply slid along without care or concern to the average physician until he was rudely awakened by the entrance of the United States into the World War.

We went into this World War practically without trained men or military or naval equipment. It is true we had a small army and navy and a National Guard, but we had neither submarines nor aircraft, and were destitute of the material needed to equip a considerable army and navy; and to create an air force we had neither trained men nor material. When one considers that in the brief time which the war lasted it is one of the modern miracles and a tribute to our Government that such gigantic tasks of organization, training, and equipment were accomplished in so short a time.

To muster and equip an army of over four million men, to build up a naval personnel, to build up an aircraft force, to transport over two million men 2700 miles over seas through enemy zones, to provide food, shelter, clothing, and equipment in so short a time is, without exaggeration, one of the great events of our history. As I said a year ago, we, like the British, muddled through it somehow. Our initiative and inexhaustable resources made us winners, but at fearful financial cost of nearly forty billions of dollars

* Read before the Nevada State Medical Society at Ely, Nevada, September 18 and 19, 1931.

and a needless sacrifice of tens of thousands of men. It left us a heritage of sick and enfeebled men that, had we possessed from the outset better and more medical supervision, better and more sanitary camps, this enormous expense of almost one billion dollars per year which we are now paying, plus a national loss of tens of thousands of men in hospitals for rehabilitation—much of this loss we could have prevented for our country.

We have a nation of about 125,000,000 people in these United States; we have a homeland of nearly 3,000,000 square miles. We have many additional territories, such as Alaska, Hawaii, Philippines, Guam, Samoa, Canal Zone, Porto Rico, and the Virgin Islands, all to be protected and all to be defended in event of war.

Our national wealth is estimated at three hundred and sixty-four billions, our yearly income at ninety billions, and our national debt at seventeen billions. Out of all this our per cent of expenses from the national income of ninety billions of dollars is put at 13 per cent. Compared with Great Britain's expense of 22 per cent and France's 33 per cent, with infinitely less national wealth, we should realize that with a numerically insignificant army and navy we are not doing our part as a nation to build and maintain a constructive preparedness such as the world's unsettled political conditions require.

Now for the medical part of the task of preparedness. Let us see what might befall us if we were to engage tomorrow in another war. Should the United States again become involved in war, it would not be with one single nation. The alliances formed in the World War on both sides show well enough the trend of the future. And a future war will not be fought by men alone. But the next war will tax every resource of man and woman power, including even the boys and girls of the nation.

And it is to efficiently supervise the medical needs of millions of men and women that your services, fellow physician and surgeons, would be required.

Upon declaring war the Draft Board would instantly go into action. The polling lists of the nation would show that about 10 per cent of our 125,000,000 people were men from twenty to forty-five years of age. This would represent the enormous total of twelve and one-half million men of military age to be examined. Of the 156,440 physicians in the United States, the Government would need the services of at least 60,000 physicians at once. The Government now has in the army, navy, public health, and Indian service about 3500 medical men. There are 18,731 physicians in the medical reserve having ranks from first lieutenant to brigadier general. There are 1385 medical officers in the National Guard. All told, we have approximately 23,600 medical men qualified in military affairs ready for duty. But to look after 12,500,000 men for first and second examinations, to eliminate the fit from the unfit, to have enough medical help in times of epidemics or in battle, so that the sick may not be neglected or the wounded die from lack of prompt attention, we need 50,000 more physicians than what we have. Sixty thousand or even seventy-five thousand trained medical officers would be the nation's most economical investment. When efficiently organized into medical and surgical units from the front line to the last hospital in the rear, it would lessen the death rate, reduce the number of sick days, and save to the homeland incalculable loss of lives and treasure.

Citizen doctors, have you given these important matters the thought they deserve? Have you ever felt that the country you are fortunate to live in, enjoying comfort and wealth, that to this country of yours you owe a most serious duty to help preserve and defend it from all enemies? If you have not, it is high time for you to think that the responsibility of the Government is not alone in the hands of its officials, but with you.

To create an Officers Reserve Corps we must have propaganda from the War Department. For this purpose I believe that the surgeon-generals of the army and navy or their deputized representatives should solicit places and be represented on the programs of all state and national, and even sectional, medical societies. Also that the army and navy representatives should be present at all medical college graduation days and solicit the young M. D.'s for the Reserve. The presence of these distinguished visitors would be welcomed at medical societies, and their presence would contribute to the dignity of the gatherings.

In turn, there should be a Standing Military Committee in every state medical society to cooperate with the county societies whose duty it should be to keep an up-to-date list of all medical men of military age, and to check up on their moral character, their physical fitness, and professional specialties. These lists could be available at all times to assist the surgeons-general of both army and navy. So that men should be selected to work along lines in which their civil practice best fitted them; square pegs for square holes, and round pegs for round holes.

Nevada, the smallest state in population in the Union, has but 90,000 people, including about 5500 Indians. We have listed in the directory of the American Medical Association 131 physicians. Of this number, fifty-four doctors are fifty years of age or under. Seventy-seven are over fifty years of age, some of whom would be available for certain kinds of medical military duty. Of the fifty-four men fifty years of age and under, eleven are surgeons, two are eye, ear, nose and throat specialists, one is a neuropsychiatrist, two are x-ray men, one is an obstetrician and gynecologist, and one is a naval officer. This makes eighteen specialists and thirty-six general practitioners.

If these fifty-four men were called to military duty the remaining seventy-nine could look after the medical practice of Nevada, both in special and general work.

The same proportion would apply to all our states and territories. How easy it would be to compile such a list. The local secretaries would know every man's medical qualifications, and in

the event of war there would be no confusion or misplacement of men to fill duties for which they were not fitted. Surgeons would be surgeons, physicians would serve as physicians, and so on through the entire medical personnel. For this purpose every state medical society should have a Standing Military Committee.

This simple paper is the desire of a patriotic heart. It is the result of experience learned in the Cuban War and in the Philippine insurrection, and from sixteen months overseas in the World War. If we could enthuse the members of our profession to a sense of their responsibility to their Government we would have fifty thousand additional medical men applying for work in the Reserve Corps. With such a number of men having some idea of military medical duty a great burden would be lifted from the heads of our Government and it would assure the nation, not only the saving of colossal treasure, but that more valuable saving—the tens of thousands of precious lives. This active interest in the military well-being of the nation manifested by its medical men would be one of the assurances of success to the flag that has never yet been lowered in defeat.

Reno, Nevada.

## ARTERIOSCLEROTIC HEART DISEASE*

### REPORT OF CASES

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DURING the greater part of the nineteenth century physicians thought of heart disease as a single disease entity with a common symptomatology and a uniform treatment. Following the discovery of the stethescope by Laennec in 1816, the physical signs of valvular disease so dominated the minds of the profession that auscultatory signs become almost the sole criterion of the diagnosis of heart disease; myocardial disease without valvular involvement frequently passed unrecognized unless there was obvious enlargement of the heart. As there was no knowledge of etiology, treatment was entirely symptomatic. Pathologic study gradually showed there is not one but many diseases of the heart and slowly the clinician became able to distinguish certain of these, to recognize that their course and outlook were different and that they resulted from different causes. This separation of disease made diagnosis more easy and initiated a more rational therapy.

But even today such progress has been largely confined to those diseases of the heart with endocardial or pericardial involvement. In most textbooks of medicine the chronic diseases of the myocardium are still considered as a whole and an attempt made to describe a common clinical picture. Again a dominant clinical picture—that of the greatly enlarged heart associated with hypertension—fills our minds and we fail to recognize other phases of the picture until the onset of decompensation or until a sudden and unexpected death shows us our error. Slowly we are beginning to realize that chronic myocarditis is not a single disease.

TABLE 1.—*Clinical Types of Heart Disease*

| | |
|---|---|
| I. Heart Diseases of Known Etiology and a Different Clinical Picture | 50% |
| 1. Rheumatic valvular heart disease (Rheumatic pericarditis) | 15-45% |
| 2. Syphilitic heart disease | 1-20% |
| 3. Congenital heart disease | 1% |
| 4. Acute bacterial endocarditis | ½% |
| 5. Subacute bacterial endocarditis | ½% |
| 6. Tuberculous pericarditis | Rare |
| 7. Traumatic heart disease | Rare |
| II. Acute or Subacute Myocarditis | 1% |
| III. "Chronic Myocarditis" | 50% |
| Arteriosclerotic heart disease—cardiosclerosis—senile heart. | |
| Hypertensive heart disease. | |
| Hyperthyroid heart disease. | |
| Myxedema heart. | |
| Heart disease associated with pernicious anemia. | |
| Heart disease associated with diabetes. | |
| Heart disease associated with chronic lung disease. | |
| Syphilitic myocarditis. | |
| Heart disease of unknown etiology. | |

### ETIOLOGIC CLASSIFICATION

At the present time certain of the myocardial diseases are being segregated upon an etiologic basis so far as our present knowledge permits. Some such classification as that shown in Table 1 is now in use in most American cardiac clinics. Already we are being repaid by a clearer knowledge of the clinical picture and course, and are approaching a rationale of treatment that is more than symptomatic. Such differentiation thus becomes of practical importance to every practicing physician.

### SCOPE AND BASIS FOR THIS STUDY

It is the purpose of the present paper to attempt a clinical description of that type of heart disease now commonly termed arteriosclerotic heart disease and to point out some differences between this form and others of the myocardial diseases. It is of course obvious that in many cases that there may be more than one etiologic factor such as hyperthyroidism and a later arteriosclerosis or hypertension in early life and arteriosclerosis later. Such mixed etiology is not infrequent and confuses the clinical picture. For the sake of simplicity the present paper deals only with those cases where arteriosclerosis is considered the sole or principal factor.

The observations made are based principally upon a study of 1000 cases of heart disease of which 156 were classified as arteriosclerotic heart disease. Some reference will be made to some pathologic work done two years ago in England but the discussion is intended to be clinical rather than pathologic. Likewise reference will be made to other reports justifying the opinions expressed. As far as possible the outcome of the 156 cases has been determined. It is believed that the scarcity of autopsy reports on these cases is counterbalanced by the fact that a good percentage of

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these patients were followed personally over a longer period than is usually possible in reports from hospital cases.

Wyckoff and Lingg [1] have defined arteriosclerotic heart disease as that type occurring in patients with the signs of cardiac defect commonly associated with arteriosclerosis in the absence of nephritis with nitrogen retention, gout or diabetes. The American Heart Association [2] has defined the criteria for its diagnosis as general arteriosclerosis associated with arteriosclerosis of the coronary arteries; or evidence of fibrosis of the myocardium with or without the presence of congestive heart failure or the anginal syndrome; or coronary sclerosis, present without general arteriosclerosis. Unfortunately such definitions are not very informative from a clinical standpoint. They do indicate the pathology shown in this disease of the heart: coronary arteriosclerosis with or without myocardial fibrosis. To these findings there is often added coronary thrombosis with or without myocardial infarction and aneurysm.

That it is justifiable to consider these features as constituting a pathologic entity, the following considerations are presented. Cabot,[3] in his discussion of 1906 autopsies showing cardiac diseases, states that the cause of most cases of fibrous myocarditis and many, if not most, cases of angina pectoris is coronary sclerosis. Allen,[4] on the basis of autopsy material, has shown the very frequent associations of myocardial fibrosis and coronary sclerosis (51.2 to 85 per cent, depending on the degree of coronary narrowing). That, if the cases of syphilis be excluded, coronary thrombosis and myocardial infarction nearly always are due to coronary sclerosis has been shown by Allen[4], Wolff and White[5], Wearn[6], Parkinson and Bedford[7], and others.

### PATHOLOGIC STUDY OF NINETEEN ARTERIOSCLEROTIC HEARTS

In a pathologic study of the hearts of nineteen consecutive deaths from coronary occlusion, the writer found coronary sclerosis the cause in twelve, syphilis in six and embolism in one.

Nathanson [9] has shown that there is a clinical picture corresponding to this pathology. So it seems justifiable to consider arteriosclerotic heart disease a clinico-pathologic entity. That there is a practical value in such consideration has already been suggested.

The relative frequency of arteriosclerotic heart disease varies in different parts of the country. The writer thinks that this variation may depend on the distribution of the population by ages.

### AGE AND SUDDENNESS OF ATTACK CHARACTERISTIC

Arteriosclerotic heart disease, like general arteriosclerosis, is a disease of the older age periods. In only four did the first symptoms appear under fifty years of age, and in only thirty-eight did they appear under the age of sixty. The ratio of males to females was three to two. It is supposed to be more frequent among mental workers and in urban life, but the series studied did not support this idea.

Thirty-three per cent of those known to be dead, died suddenly. Sudden death was considerably more frequent among these patients than in any other of the writer's groups of heart disease. To emphasize this, attention is called to Willius' [10] report of 330 patients who died suddenly of heart disease; sudden death was more frequent in the arteriosclerotic type than in any other except thoracic aortic aneurysm. Reuter [11] in Vienna considered the same question from the postmortem angle. Of 1000 cases of sudden cardiac death coronary artery disease was found in 72 per cent.

### ASSOCIATED CLINICAL SYMPTOMS

Clinically associated with the frequency of sudden death, was the high percentage of patients with arteriosclerotic disease who showed paroxysmal attacks of dyspnea, angina pectoris, or Stokes-Adams syndrome, with complete or relative freedom from all symptoms between such attacks. About one-third of the patients gave such history.

Another distinctive feature was the frequent total absence or usual paucity of diagnostic physical findings. Because of emphysematous lungs and the common absence of a visible or palpable apex impulse it was frequently difficult to determine heart size. In about half the number physical examination showed no enlargement. Even by roentgen-ray, ten failed to show enlargement. Usually the heart was only markedly enlarged if hypertension was or had been present. The frequent absence of enlargement has been emphasized by Miller and Weiss [12] and the parallelism between enlargement and hypertension by Cabot.[3] Organic valve defect was present in only ten instances. Murmurs were entirely absent in 57 per cent of the patients examined. When present, they were rarely of any diagnostic value. The heart sounds were of poor quality in 69 per cent. This finding appears to have some diagnostic value. Congestive failure was more often absent and when present was frequently slight even at death.

There was a relative infrequency of hypertension—in 46 per cent of the patients the systolic pressure was under 140; in 73 per cent it was under 160.

Syphilis, thyroid disease, marked chronic pulmonary disease, chronic nephritis with nitrogen retention, diabetes and pernicious anemia were absent.

That the electrocardiogram and x-ray examination were of great diagnostic value will be noted later.

Nathanson[9] studied the clinical and postmortem findings of 113 patients with arteriosclerotic heart disease. My observations agreed so well with his that I reproduce in tabular form the four clinical groups into which he separated his cases. It needs little comment.

TABLE 2.—*Clinical Types of Arteriosclerotic Heart Disease (Nathanson's Classification of One Hundred and Thirteen Patients)*

| Type | Per Cent | Heart Size | Hypertension | Attacks, Pain or Dyspnea | Other Cardiac Symptoms | Congestive Failure | Comment |
|---|---|---|---|---|---|---|---|
| I. | 37.2 | Normal | Absent | Present | Absent | Absent | Diagnosis on symptoms. Death from angina. |
| II. | 2.6 | Normal | Absent | Present or Absent | Present | Present | Congestive failure with small heart. |
| III. | 22.6 | Enlarged | Present (usually) | Present | Absent | Absent | Similar to I, but heart enlarged and hypertension. |
| IV. | 39.0 | Enlarged | Present | History | Present | Present | History of anginal attacks. Short duration. Death usually before much edema. Death usually sudden. |

Because it may be the only symptom, angina pectoris deserves more extended consideration. First, it should be emphasized that angina is a symptom and not a disease and, unfortunately, common usage has made it cover almost any precordial pain. It would be an excellent thing if its use could be confined to the pain of coronary artery disease. There were certain features of the angina pectoris of arteriosclerotic heart disease that usually served to distinguish it from the precordial pain of other heart diseases. In coronary artery disease the pain was more likely to be fatal, sharply paroxysmal and midline or lower sternal or epigastric. The facies and the sense of impending death were characteristic. The associated dyspnea was more subjective than objective. The signs of congestive failure were usually absent, pain often occurred at rest or during sleep as well as under exertion. It was relieved by nitrites, but not by digitalis, sedatives, or suggestion.

Heart pain associated with other diseases of the heart was less likely to be fatal, was usually more continuous, located higher in the chest and reacted more satisfactorily to digitalis than nitrites. The patient lacked the characteristic appearance of the coronary type and usually showed some other evidence of myocardial strain such as cyanosis, edema, or objective dyspnea. The pain of cardiac neurosis or intercostal neuralgia (the radicular syndrome) usually presented no difficulty in differential diagnosis.

### REPORTS TO ILLUSTRATE VARIOUS CLINICAL FEATURES

Some of the clinical diagnostic features may be illustrated through several case reports:

CASE 1.—A man of sixty-one was admitted to the University College Hospital in London complaining of symptoms due to carcinoma of the rectum. The past and present history revealed no symptoms of heart disease. Physical examination showed no enlargement of the heart; the rhythm was regular, the sounds of fair quality. There were soft apical and aortic systolic murmurs, not characteristic. The blood pressure was 140/84. The presence of heart disease was not suspected. Five days after a colostomy the patient died suddenly without pain. Autopsy showed a heart weighing 450 grams (a heart definitely enlarged). There was a fairly old aneurysm of the apical portion of the left ventricle. All the larger coronary arteries were markedly sclerotic with areas of calcification in the proximal parts of both left and right stems. There was slight atheroma at the commencement of the aorta and sclerotic calcification with fusion of the aorta valve cusps. The right coronary was completely occluded by a recent thrombus, the immediate cause of death. The left anterior descending artery was occluded by an organized thrombus. The occlusion of this vessel had resulted in the ventricular aneurysm. The microscopic pathology suggested that this was of at least several weeks' duration. The myocardium showed fibrosis. Despite the extensive and old pathology shown at autopsy the presence of heart disease prior to death had not been recognized by an examination made with average care. X-ray and electrocardiographic examination were not made.

* * *

CASE 2.—A stock raiser, age fifty-five, came in November 1922 complaining of pain in the anterior midchest just to right of midline. The pain came only after exertion. At first it radiated to left arm, later it remained localized in the midsubsternal area. There was no dyspnea or palpitation, but when the pain occurred he belched much gas. Rest and nitrites relieved the pain. Between attacks he felt entirely well. On examination the apex impulse was not seen or felt, all heart sounds were weak. No enlargement of the heart could be made out. There were no murmurs. The rhythm was regular. The blood pressure was 150/80. The radial arteries were slightly sclerosed. The rest of the examination was negative.

X-ray examination (fluoroscopy and seven-foot plate) of the heart showed no enlargement except a prominent aortic knob with increased density. A diagnosis was made of arteriosclerotic heart disease with angina pectoris.

After a month's rest the attacks disappeared. Four months later he attempted to return to his occupation and had recurrence of his attacks. He then retired from business and had no symptoms.

I heard no more from him until January 1, 1930, when I had an urgent call and found him in an attack of coronary thrombosis from which he died in a few hours. His wife stated that he had been quite well until a few weeks before when after the purchase of a new home he walked up a hill to it twice each day. This walk always produced epigastric pain. A physician consulted said it was indigestion and prescribed accordingly, without relief. A week before his death the physician said the heart was affected and sent him to bed. But the attacks of pain still persisted at intervals until the final coronary occlusion.

In this record I wish to emphasize that the only diagnostic evidence was attacks of pain, weak heart

sounds, and the x-ray findings. The heart was not enlarged, there were no murmurs and no real hypertension.

* * *

CASE 3.—A business man of sixty-three complained of weakness, shortness of breath, and nocturnal attacks of dyspnea and cough for a year. Occasionally these attacks would be associated with precordial pain. On examination the apex impulse was not seen or felt; the rhythm was regular. In the sitting posture there was a soft apical systolic murmur. There were a few scattered râles in each lung, but no edema elsewhere. The heart did not seem enlarged. The radial arteries were moderately sclerotic. The blood pressure was 148/80. In the attacks the patient appeared in immediate danger of death, as there was an acute pulmonary edema. Fluoroscopy and an orthodiagram of the heart showed slight transverse enlargement and markedly widened dense aortic knob. The electrocardiogram showed intraventricular block and ventricular premature beats. (Premature beats seem of more prognostic significance in this type of heart disease than in any other.) The contrast between a dangerously ill patient and relatively negative physical findings were striking.

The x-ray and electrocardiogram gave definite evidence of heart disease. In this patient attacks of acute pulmonary edema were the predominating symptoms.

* * *

CASE 4.—A business man of fifty-five complained of dyspnea and precordial (apical) pain on exertion for two weeks. The pain did not radiate. For a week there had been slight edema of the ankles. Examination showed no enlargement of the heart; the sounds were of poor quality; the rhythm was regular. There was a soft apical systolic murmur. The blood pressure was 138/74. X-ray showed questionable enlargement of the heart and aorta. The electrocardiogram showed intraventricular block with small complexes and abnormal T waves. Under treatment, the pain ceased but the dyspnea persisted. The edema remained slight but persistent. About six weeks later after a heavy meal the dyspnea became acute, abdominal pain appeared and in a few hours the patient died. I wish to emphasize not only the minimal physical findings in this patient, but the fact that even the x-ray failed to show definite abnormality of heart size, and also the fact that though the patient showed congestive failure it was never marked and at the end the death was rather sudden.

* * *

CASE 5.—A housewife of seventy-four complained of attacks of fainting, weakness and palpitation for a year. There was some dyspnea. Examination showed a regular rhythm at 30 per minute. At the apex there was a rough, long metallic apical systolic murmur. The apex beat was forcible and diffuse. The heart was moderately enlarged. Occasionally auricular beats could be heard between ventricular systoles. The blood pressure was 260/160, the radial arteries markedly sclerosed. During hospital observation there were several Stokes-Adams attacks. These finally disappeared under treatment, and the patient was discharged improved. Electrocardiogram showed complete auriculoventricular block. X-ray examination showed a markedly enlarged heart, wide aorta, and dense aortic knob. I wish to emphasize that in this patient, where there was marked hypertension, the heart was markedly enlarged and the apex impulse forcible. The systolic apical murmur was of the type suggestive of sclerotic changes in the mitral valve. Complete heart block and Stokes-Adams attacks are more frequent in cardiosclerosis than in any other type of heart disease.

* * *

CASE 6.—A man of sixty-eight in April 1922 complained for two weeks of attacks of pain across the chest and the epigastrium. There was dyspnea only with the attacks. Physical examination showed a slightly enlarged heart, a soft apical systolic murmur, diminution of the sounds at the apex but accentuation of the aortic and pulmonary second sounds. The rhythm was regular. X-ray and electrocardiographic examination were not made at this time. There was no congestive failure. The attacks of angina pectoris persisted for several months and gradually ceased. With their cessation there gradually appeared edema of the legs. An electrocardiogram at this time showed bundle branch block. In April 1923 marked alteration of the pulse appeared. The edema, enlargement of the liver and dyspnea gradually increased until death in June 1923. This case illustrates the fact that such patients may pass through an anginal phase and later die of congestive failure.

COMMENT

From the electrocardiographic standpoint it is to be emphasized that while there are no findings pathognomonic of arteriosclerotic heart disease that only five of the series in which electrocardiograms were taken showed an entirely normal mechanism. Intraventricular block, bundle branch block, and complete auriculoventricular block are more frequent in this form of heart disease than in any other. The same is true of abnormalities of the T wave. Thus the electrocardiogram in these cases is of more diagnostic value than in any other type of heart disease.

In Table 3 are presented some of the contrasts between the writer's cases of arteriosclerotic heart disease and hypertensive heart disease.

TABLE 3.—*Comparison of Arteriosclerotic and Hypertensive Heart Disease*

| | Arteriosclerotic Heart (156 cases) | Hypertensive Heart (98 cases) |
|---|---|---|
| Age of onset | Under 50 years 2.5% | Under 50 years, 25.0% |
| Sex | Male, 61.0% | Males, 17.0% |
| Pathology | Coronary sclerosis-thrombosis<br>Myocardial fibrosis | Hypertrophy and dilatation<br>Myocardium otherwise normal |
| Murmurs | Absent in 57%<br>Soft if present | Absent in 36.0%<br>Loud |
| Sounds | Usually weak | Usually loud |
| Apex impulse | Usually not seen | Usually easily seen |
| Heart size | Normal or moderately enlarged | Usually markedly enlarged |
| Angina | Frequent and characteristic | Infrequent and different in type |
| X-ray | Absent or moderate enlargement<br>Aortic knob dense | Left ventricular enlargement<br>Aortic knob normal |
| Electrocardiogram | Intraventricular block<br>T wave changes | Left axis deviation |
| Type of death | Usually sudden<br>Often from angina | Usually gradual<br>Usually from congestive failure or nephritis |

### TREATMENT

Discussion of the treatment of arteriosclerotic heart disease may be conveniently divided into treatment directed toward the arteriosclerotic process and treatment of the various symptoms, angina, congestive failure, Stokes-Adams attacks, etc. With the exception of the treatment of congestive failure it is difficult to evaluate any remedial agent employed.

Obviously as we know little of the etiology or arteriosclerosis, prophylaxis and treatment must be empiric. Probably the course of the arteriosclerotic process may be delayed by reducing mental and physical strain of individuals approaching the age of sixty. Certainly it is good therapy to advise them to take longer, more frequent and less strenuous vacations. The removal of all sources of focal infection seems reasonable therapy. Small doses of iodides or thyroid extract have seemed beneficial. All such treatment must be highly individual to meet the particular circumstances of each patient.

The treatment of congestive failure in this type of heart disease differs too little from its treatment in other types of heart disease to permit discussion.

Prevention and treatment of anginal attacks is of greater interest. Little need be said regarding the use of the nitrites for relief of the attacks except that occasionally it must be used in doses larger than that ordinarily advised.

Relief was only obtained in treatment of one patient by doses of 3/100 grain repeated in ten minutes. Occasionally cessation of the attack followed external application of heat or the mustard plaster. Morphin was often required. The writer feels that he has not infrequently erred by using this drug too sparingly, particularly where attacks were rapidly recurrent or where attacks occurred during sleep. In the prevention of recurrent attacks the greatest emphasis must be laid upon rest. Certainly attacks of any great severity indicate absolute rest for several weeks just as urgently as if the patient presented an anasarca and urgent dyspnea. This rest must be mental as well as physical and the nicest judgment must be exercised in discovering irritant emotional causes. In one patient contact with a certain business associate almost invariably produced an attack. These ceased on elimination of such meetings. The patient's home is often a poor place for mental rest. Not infrequently the trivial annoyances of the household régime prevented recovery which was easily attained on removal of the patient to a hospital. Surprising benefit resulted in a few instances by teaching the patient muscular relaxation. No set rules for diet seem possible. Small meals of easily digestible food fitted to the peculiarities of the patient was the only rule. In one patient attacks were avoided by soda in large doses after each meal. The bed pan was often a means of precipitating attacks that were avoided by the use of a commode beside the bed. The writer feels that with rare exceptions tobacco should be interdicted. Bromides and luminal were very useful and almost compulsory in a nervous, sleepless patient. These and the xanthin derivatives for their supposed action in dilating the coronary arteries seemed by far the most useful drug agents. Of the xanthin derivatives the writer found nausea too frequent with euphyllin and theophyllin itself to justify their frequent use. Theominal (theobromin with luminal) and theocalcin in some patients appeared almost specific in prophylaxis of the anginal attacks. Caffein found more use in paroxysmal dyspnea than in angina. In view of the utility of these drugs there is no reason for forbidding tea and coffee to such patients. Digitalis was only used if there was an associated congestive failure. In such patients it did not appear to affect the anginal attacks unfavorably.

The treatment of coronary thrombosis differed from angina only in degree.

Of the other symptoms of arteriosclerotic heart disease the most interesting was Stokes-Adams syndrome. Here bed rest, barium chlorid and possibly thyroid extract seemed the most efficacious agents.

When hypertension was an associated symptom, attempts at reduction of the pressure by drugs appeared to do more harm than good.

When auricular fibrillation was present digitalis seemed the drug of choice. Previous experience with the use of quinidin in an attempt to restore normal rhythm did not seem justified by former results.

Deseret Bank Building.

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### DISCUSSION

W. R. Tyndale, M. D. (Intermountain Clinic, Salt Lake City, Utah).—The classification of heart diseases according to etiology has been a most clarifying and satisfactory thing to me personally in the diagnosis and treatment of cardiac cases. Our medical textbooks and systems of medicine have not yet begun to follow such a classification. Every paper and article which differentiates a distinct entity out of the old mass of cardiac facts, called myocarditis,

is rendering this subject real service. The paper under discussion presents a clear, clinical picture with a definite etiologic and pathologic basis, recalling to my mind not a few clinical cases of my own not thoroughly understood at the time or adequately treated. The general practitioner who hears or reads this paper, knowing that the majority of all cardiac patients come to him for diagnosis and treatment, must be grateful for this clear elucidation of a group of cases whose seriousness heretofore has not been sufficiently comprehended.

The author implies that it is possible to differentiate the angina pectoris of coronary artery disease from angina pectoris of other conditions. I would not care to enter into an argument with him on this point; but suffice it to say, that the cause of angina pectoris is still much disputed. Sir Clifford Allbutt and his pupils think this symptom, or syndrome, is due to aortitis, the condition of the coronaries being incidental; others think it due to anoxemia of the myocardium; while S. Wasserman says it is a reflex syndrome in the region of the vegetative nervous system, with medullary spinal connections. Albutt further states that death in angina pectoris is due, ordinarily, to vagus inhibition, that the coronary arteries and the myocardium have nothing to do with the pain of angina, but much to do with the mortality—a healthy myocardium enabling the heart to recover from the inhibition. True angina pectoris is such a well established clinical condition that its limitation to disease of the coronary arteries alone seems impracticable at present.

The treatment of arteriosclerotic heart disease has been stated briefly but succinctly, with due emphasis upon rest. However, the treatment of an attack of coronary occlusion has been almost too brief. The classical clinical picture of coronary occlusion was first elucidated to me by the author some years ago at which time he saved the life of a fellow practitioner in a typical case of coronary occlusion by constant, painstaking treatment, kept up for more than ten weeks, in which massive doses of morphin at first, combined with hospital rest and care under special nurses, were major factors. Quite recently a case of arteriosclerotic heart disease, with Stokes-Adams syndrome in an aged, feeble patient, under Doctor Viko's care recovered quite miraculously with the liberal use of barium chlorid.

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William J. Kerr, M. D. (University of California Hospital, San Francisco).—Doctor Viko has rendered a real service to the medical profession in differentiating arteriosclerotic heart disease from the state usually found in association with hypertension. Recently several able clinicians have been in a quandary when trying to give a differentiation of arteriosclerotic heart disease or the so-called degenerative diseases associated with the involution period of life. It is only through a study such as this that clinical pictures can be defined. One of the most gratifying things which has happened in internal medicine in recent years has been the recognition of the condition known as "coronary occlusion." There is scarcely a recent graduate from any of the leading schools who is unable to recognize this clinical entity and to differentiate it from a lot of conditions which are not due to diseases of the heart at all. Angina pectoris as a term should be reserved for attacks of pain which come on with effort, which are relieved by rest and nitrites. For the present we may not fully understand the causes of this symptom complex. We are not absolutely certain whether it is associated with spasm of the coronaries or of the aorta or whether it is a reflex phenomenon. There are some clinicians who still apply the term "false angina" or "pseudo-angina" to a group of conditions with pain in the region of the heart. I would prefer to discard this term altogether because of the associations in the minds of the laity.

Doctor Viko has given a clear discussion of the treatment of this group of conditions. Any physician who has treated his patients suffering from coronary occlusion with prolonged rest and has prescribed such additional measures as Doctor Viko has outlined will be certain to have many gratifying results. There is much that can be done to postpone the inevitable outcome in these cases by sparing the heart and by the proper treatment of such irregularities and the congestive failure as they occur. One can do the patient much harm by radical measures. The physician must realize that the patient will run a gradual downhill course in spite of all treatment. During recent years I have been much chagrined a few times to find that patients who had suffered for many years with coronary diseases and had responded well to treatment for the heart eventually showed symptoms associated with vascular disturbances in other organs, particularly in the brain. Some of these patients have then gone through a period of weeks, months, and even years, completely disabled because of their mental disturbances and have been a care and a burden upon their families, friends, and their resources. It makes one wonder at times whether one is justified in prolonging the lives of individuals to such an end.

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G. Gill Richards, M. D. (115 East South Temple, Salt Lake City, Utah).—It is certainly gratifying to see the effort made by such papers as Doctor Viko's to differentiate certain types of heart diseases. During the first few years of my medical practice, a patient had heart disease or not according to whether or not the attending physician heard a heart murmur, and digitalis was prescribed accordingly. Fortunately for the patient, the dosage was so small no damage was done. I remember distinctly a patient of my father's who thought because his ten drops of tincture of digitalis was helping him took a teaspoonful, and I was sent immediately to wash out his stomach. There are still many of us who need certain facts emphasized such as the one that heart murmurs *per se* are among the least important factors in prognosis and therapy of heart disease.

Not long ago an autopsy upon one of my patients who died in Salt Lake on his way to California revealed a mitral valve so stenosed it would barely permit an ordinary lead pencil to pass through. It is rather remarkable that such a heart could carry on in a man from the age of eighteen, when he had a severe rheumatism, and permit him to live the typical life of a cowboy in Wyoming without any discomfort until the age of sixty-three years, when he was seized suddenly with a severe pain and shortness of breath as he was running for a train two months before he died of a coronary occlusion.

It is no wonder that men out in the country without our modern equipment for diagnosis still refer cases of coronary thrombosis in for x-ray of the gallbladder and stomach, etc., when such patients die with no other symptoms than what they misinterpret as heartburn, or even pain in the jaw. Recently we have lost two such patients. In one of these, auscultation one minute before his sudden death failed to reveal a single sign of cardiac disease.

Any effort such as Doctor Viko's to reclassify heart disease in such a way as to help us to better understand the many varieties will certainly enable us to improve our methods of recognizing and treating these patients. I especially appreciate his somewhat optimistic discussion of what can be accomplished in many of these patients while at the same time he emphasizes many of the danger signals.

# AMEBIASIS*

## COMMENTS ON VARIOUS AMEBACIDES
## REPORT OF CASE

*By* HAMILTON H. ANDERSON, M. D.
AND
ALFRED C. REED, M. D.
*San Francisco*

DISCUSSION *by John F. Kessel, Ph. D., Los Angeles; Herbert Gunn, M. D., San Francisco.*

SINCE the recognition of *E. histolytica* as the cause of endemic dysentery, attention has been focused on treatment. A variety of drugs and methods have been advocated which it is unnecessary to review here. More general satisfaction probably has been expressed with ipecac and emetin than with any other single drug type of therapy. Emetin seems to have approached nearest to the requirements of a specific cure but has fallen short in certain important particulars. These are the limited percentage of cures by the use of emetin alone, and the unpleasant symptoms and high toxicity of the drug itself for the patient. The necessity of hypodermic administration is a disadvantage, compared with a drug of similar effectiveness which could be given by mouth to ambulatory patients. A discussion has been made of the symptoms and dangers of emetin poisoning,[1] in which the toxic action on the heart muscle and the easy production of peripheral neuritis have been emphasized. Emetin has been a useful but dangerous and not fully satisfactory drug, whose indiscriminate and excessive use has become an abuse with serious damage to many patients.

The effectiveness of other drugs proposed for the eradication of *E. histolytica*, as judged by percentage of cures, has been relatively low in spite of glowing reports by individual workers. Uniform results of high percentage of cures have in no case been confirmed by sufficient workers in different fields. In many published observations there is little evidence that the curative value of the drug was estimated from a sufficiently long observation of the cases, checked by competent stool examination.

In regard to the criterion of cure, it is to be remembered that amebiasis means invasion of the host by *E. histolytica*, an invasion which has never been proved to occur through any other portal than the colon. The one and only diagnostic sign is the microscopic identification of *E. histolytica*. This organism does not of necessity produce dysentery or even diarrhea, and only in the presence of dysentery or diarrhea ordinarily do the trophozoite or active forms appear. In any case, diagnosis rests preferably on fixed stained preparations showing *E. histolytica*. We have arbitrarily assumed that the organism must be absent from the stools on adequate examination by a competent examiner for a period of at least three months following termination of treatment in order to justify the conclusion of cure having been effected. Remembering the inconstancy of appearance of the cysts, it is evident that numerous examinations must be made over a three months' period at least. Possibility of reinfection must be considered in connection with the personal hygiene and direct exposure of the patient. Review of published cases and groups of cases shows at once how rarely these minimal requirements for a judgment of cure have been met.

So far, then, no satisfactory treatment of amebiasis has been developed. Even various combinations of drugs as, for example, emetin with chiniofon and acetarsone, are not invariably curative and have a definite risk of toxicity. A fully satisfactory treatment should interfere little, if at all, with the usual activity of the patient, should be of such low toxicity as to carry no practical danger of drug symptoms or damage, should be capable of administration by mouth, and should be of low cost. These conditions are not met by any accepted present-day treatment of amebiasis.

For the reasons enumerated, the search for a better drug has been carried on by many workers in recent years and there is hope that the end of the therapeutic trail may be in sight. The case reported here illustrates a common manner of response of amebiasis to various drugs which have been highly advocated for its cure and which really up to this time represent the best available agencies for fighting this infection. The value of the report lies in the length of time during which the patient has been followed, the variety of therapy employed, and the interesting implications to be derived from the frequent stool examinations as related to the treatment and the physical condition of the patient.

### REPORT OF CASE

G. S., male, aet, thirty-four, white, married, seaman and laborer.

*Complaint.*—Dysentery; five to sixteen watery stools daily, with blood, mucus, and abdominal pain, since 1920.

*Present Illness.*—Six months after trip to Argentina and West Indies patient began having fifteen to sixteen thin, watery, yellow stools daily, containing blood and mucus, and suffered from abdominal pain, not associated with jaundice, tenesmus, nausea, or vomiting. Complained of anorexia, however, and lost thirty pounds weight during the first three years of illness. He was given intramuscular injections in France during this time, with some temporary relief. The presenting symptoms recurred, however, and continued to 1923, when he received anti-amebic therapy, again only temporarily relieving him. In 1925 he was hospitalized again and was given more treatment without lasting benefit. Five years ago the appendix was removed but his symptoms continued, nevertheless. Since then the dysentery has been accompanied by tenesmus, anorexia, loss of weight, fatigability, and weakness of the legs. He was referred to our clinic in February 1930, and his course since that time is shown in the accompanying table. Six months previous to admission the patient had been given a series of intravenous injections and some oral therapy, the exact nature of which is not known.

*Family and Marital History.*—Negative.

*Past History.*—He was born in Malta, where he lived for eleven years, then to New York for eight years, and has lived in California since the age of nineteen

* From the Pacific Institute of Tropical Medicine within the Hooper Foundation for Medical Research, University of California, San Francisco.
* Read before the joint meeting of the General Medicine and Pathology and Bacteriology Sections of the California Medical Association at the sixtieth annual session at San Francisco, April 27-30, 1931.
* With the technical assistance of Miss Dorothy A. Koch.

except for a four-year period at sea. The patient denies previous illnesses, but admits having had blood in his stools and "liver trouble" eighteen years ago. Venereal symptoms denied.

*Habits.*—Moderate smoker, has no food intolerances, and sleeps eight hours nightly.

*Weight.*—Average 150 pounds, present 146 pounds.

*Physical Examination.*—Temperature, pulse, and respiration are normal. Height, 5 feet 4 inches, weight 143 pounds. The patient is a poorly nourished adult, white male, apparently chronically ill. The skin and mucous membranes are pale, anterior cervical lymph nodes are palpable. Several carious teeth are present, with marked retraction of the gums. Chest is essentially negative, heart is not enlarged, pulse is regular, and blood pressure 120/70. The abdomen is full, soft, and well muscled, with a healed scar in the R. L. Q. and definite tenderness in the L. L. Q. along the descending colon and cecum which is palpable. Liver and spleen are not felt. Extremities are negative except for exaggerated patellar reflexes.

*Laboratory Findings.*—Blood Wassermann, reaction negative. Urine, negative. Blood: hemoglobin, 75 per cent (Sahli); red cells, 4,350,000; white cells, 9650 with 70 per cent neutrophils, 19 per cent lymphocytes, 6 per cent monocytes, and 5 per cent eosinophils. Stool: watery, brown, with blood and mucus, positive for motile *Entamoeba histolytica.* Phenosulphophthalein kidney function test:

| | Cubic Centimeters | Per Cent |
|---|---|---|
| First hour | 125 | 35 |
| Second hour | 100 | 15 |
| Total | 225 | 50 |

Icterus index, 14. Electrocardiogram, rate 52, S. A. bradycardia with sinus arrhythmia, within normal limits. X-ray, gastro-enteric studies reveal no organic lesion, except spasticity of the colon. Films of gallbladder are negative.

## COMMENT

In Table 1 the progress of the patient is reported during the course of the present illness. It is to be noted that almost every promising drug proposed for use in amebiasis during the past twenty years has been tried without avail, with one exception. "Carbarsone," which is carbaminophenylarsonic acid,[2] has improved the patient subjectively and has cleared the stools of *Entamoeba histolytica* for more than eleven months following the last dose of the drug. The patient has gained weight, is free of symptoms, and has shown no evidence of toxicity from arsenic.

No practical conclusions should be drawn from the results of therapy in one case of amebiasis, but it may be said, however, that we have had comparable effects from "carbarsone" in a series of forty patients who have had a proper period of observation for three months after treatment. We expect to report such a group of patients soon, but present this case in detail to indicate the variety of response in an individual patient to the various amebacides which are recommended.

## SUMMARY

1. The therapy of amebiasis has heretofore been unsatisfactory.

2. The most effective drugs in general use, especially emetin, are not certainly curative and easily cause serious toxic symptoms.

3. A case is reported in which a great variety of drugs had been employed repeatedly without success, and in which a "cure" apparently followed the intensive use of a hitherto unused synthetic arsenical, "carbarsone" (carbaminophenyl arsonic acid).*

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2. Supplied through the courtesy of the Lilly Research Laboratories, Indianapolis. For previous reports on this drug, see: Leake, C. D., Koch, D. A., and Anderson, H. H., Proc. Soc. Exper. Biol. and Med., 27:217, 1930; Chen, M. Y., Anderson, H. H., and Leake, C. D., ibid., 28:145, 1930.

## DISCUSSION

JOHN F. KESSEL, PH. D. (University of Southern California, Los Angeles).—This special study of the treatment of a single case of amebiasis may illustrate one of two types of cases which are commonly encountered. First, the case which has received inadequate treatment for amebiasis and has passed from the hands of one inexperienced physician to another, or second, the case which has actually proved resistant to adequate treatment with an accepted amebacide. It would appear from the history that the latter picture obtains in this instance. In looking over the list of early treatments employed in this case it is of interest to note that emetin in some form or other was the drug most commonly used and it would appear that dosage generally recognized to be sufficient was employed at least on two different occasions. The fact that the case did not respond to emetin illustrates the experience common to many, that for chronic intestinal amebiasis emetin in doses which can be tolerated by most patients is often ineffective. This fact, however, does not rule out the use of emetin in amebic dysentery and in amebic hepatitis, where it produces dramatic results. Arsenicals other than stovarsol were used in the early treatment and chiniofon or yatren was employed, but when given orally insufficient amounts to produce a cure were administered. Personal experience in following up one hundred cases treated with yatren in the Peking Union Medical College in which 90 per cent responded to the treatment led to the conclusion that this drug is a very satisfactory treatment for chronic amebiasis. It was not, however, as effective against other of the intestinal protozoa as against *Entamoeba histolytica.* As a consequence cases of mixed protozoal infection and cases resistant to yatren were treated with a combination of yatren and stovarsol. Three grams of yatren were given by mouth on the odd days and .37 grams of stovarsol were given on the even days for a period of two weeks. This treatment proved especially effective and recently in the Los Angeles General Hospital in a series of twenty-five cases so treated and followd up by Dr. C. L. Davison and myself a remarkably high incidence, both of protozoölogical and of clinical cures, has resulted.

The attempt here reported on the part of Doctors Anderson and Reed to employ an effective treatment for amebiasis which will produce the minimum toxicity to the patient and the maximum amebacidal results is to be commended for this is a marked need in the field of therapy in protozoiasis. It is to be hoped that their report of additional cases will show the same effective results reported in this instance.

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HERBERT GUNN, M. D. (2000 Van Ness Avenue, San Francisco).—The effort of the authors to find a drug which will be amebacidal and at the same time non-

* Since this case was presented before the California Medical Association on April 30, 1931, the patient has been examined at frequent intervals. Clinically he is cured, and ten stool examinations from May 1 to November 12, 1931, have been negative for Entamoeba histolytica. During the past eleven months, then, following the last dose of carbarsone, the patient has been clinically well for the first time since the onset of his infection in 1920.

TABLE 1.—*Response of Patient to Various Amebacidal Agents*

| Date | Stool Examinations* | Treatment | General Condition and Response to Therapy |
|---|---|---|---|
| 1920-1923 | | Intramuscular injections in France (drug not known) | Fifteen to sixteen watery stools, with blood, mucus, and abdominal pain. Temporary relief. |
| 8-9-23 | +E. histolytica (motile) | Emetin HCl (intramuscular) 0.65 gram in eighteen days<br>"Alcresta ipecac" pills (oral) six daily for eighteen days<br>Quinin sulphate 1:1000 solution per rectum, twice daily for eighteen days<br>Bismuth subnitrate (oral) twelve grams daily for eighteen days<br>Neoarsphenamin 0.6 and 0.9 gram (intravenous) | In hospital, 8-9-23 to 9-22-23. Weight on entry 136.5 pounds, on discharge 144.5 pounds. Frequency of stools reduced from five to six daily to one formed movement a day.<br>Relief for two weeks. |
| 10-24-23 | +E. histolytica (motile) | Emetin bismuth iodid (oral) 0.2 gram daily for fourteen days | In hospital from 10-24-23 to 10-26-23. Six to seven movements daily with blood and mucus. |
| 2-26-25 | +E. histolytica (motile) | Emetin HCl (intramuscular) 0.65 gram in ten days<br>Neoarsphenamin 0.6 and 0.9 gram (intravenous)<br>Emetin bismuth iodid (oral) 0.2 gram daily for ten days | Dysentery persists.<br>In hospital from 2-26-25 to 3-17-25. Weight on entry 144.5 pounds, on discharge 149.0 pounds.<br>Temporary relief. |
| 7-30-29 | | | Eight to ten watery stools, with blood, mucus, and abdominal pain. |
| 9-15-29 | | Intravenous and oral therapy, nature of drugs not known | Symptoms persist. |
| 2-17-30 | +E. histolytica (motile) | Treated locally for internal hemorrhoids, referred to us by Dr. Dudley Smith (surgical clinic) following proctoscopy, for investigation | ("Ulcerations of rectum which look like amebiasis.") |
| 2-18-30 and 19-30 | +E. histolytica (motile) | | Weight 143 pounds. |
| 2-20-30 | +E. histolytica (motile) | "Kurchi alkaloids" (oral) five grams in ten days. | No symptomatic relief. |
| 2-25-30 | Negative | | Positive stool on 3-3-30. |
| 3-4-30 | +E. histolytica (motile) | "Auremetin (oral) two grams in fifteen days | Blood pressure 120/70, pulse 70.<br>Temporary relief. |
| 3-11-30 | Negative | | |
| 3-15-30 | +E. histolytica (motile) | | Two to three formed movements a day without pain, blood or mucus. |
| 3-18-30 | +Giardia intestinalis | Emetin HCl (subcutaneous) 0.65 grams in twelve days | Presenting symptoms recurred. |
| 3-29-30 | Negative | | |
| 4-5-30 | +E. histolytica (motile) | | |
| 4-8-30 | Negative | | |
| 4-10-30 to 4-28-30 | Negative<br>Negative | Acetarsone (oral) 2.75 grams in eleven days<br>Chiniofon (oral) 7.5 grams in fifteen days | Symptomatic relief. Two formed movements daily, no pain, blood, or mucus.<br>Condition good. |
| 4-12-30 | +E. histolytica (culture) | | |
| 5-15-30 | Negative | | Blood pressure 112/72, pulse 70. Presenting symptoms recurred. |
| 6-2-30 | (Charcot-Leyden crystals) | Chiniofon (oral) 7.5 grams in ten days<br>Chiniofon (rectal) 50.0 grams in ten days | In hospital from 6-2-30 to 6-14-30. Much improved. One to two formed movements daily, no pain, blood, or mucus. |
| 6-16 to 24-30 | Negative | Emetin HCl (subcutaneous) 0.55 gram in fifteen days | Symptoms recurred, i. e., four watery movements daily with blood and mucus, no pain. Blood pressure 138/64, pulse 76. |
| 7-1-30 | +Strongyloides stercoralis | | In hospital from 7-1-30 to 7-8-30. |
| 7-2 to 10-30 | +E. histolytica (motile) | Acetarsone (oral) 5.0 grams in ten days | Excessive perspiration, dermatitis, and pains in joints. |

* Fresh stool and fixed wet iron hemotoxylin preparations routinely examined.

TABLE 1.—*Response of Patient to Various Amebacidal Agents (Continued)*

| Date | Stool Examinations* | Treatment | General Condition and Response to Therapy |
|---|---|---|---|
| 8-5-30 | (Culture negative for colon-typhoid group) | | Blood pressure 110/68. Weight 152.5 pounds. Three formed movements daily. Symptomatic improvement. |
| 8-28-30 | +E. histolytica (motile) | | |
| 8-30-30 | Negative | | Symptoms, four to five watery stools with pain in rectum. |
| 8-31-30 to 9-19-30 | Negative<br>Negative | "Carbarsone" (oral) 1.5 gram in five days<br>"Carbarsone" (oral) 1.5 gram in seven days | Two to three watery stools daily, no blood, no mucus. |
| 10-16-30 | | | Six watery stools daily, no pain, no blood, no mucus. |
| 10-24-30 | +E. histolytica (culture) | | Three watery movements daily with blood and mucus, but subjectively improved. Blood pressure 112/70. Weight 152 pounds. |
| 10-28-30 | +E. histolytica (culture) | "Carbarsone" (oral) 3.0 grams in ten days | Five watery stools daily with pain, otherwise no change in condition. |
| 11-1 to 13-30 | Negative | | "Feels fine," no evidence of arsenic toxicity. |
| 11-22-30 | +E. histolytica (cyst and motile) | | |
| 11-25-30 | Negative | "Carbarsone"† (oral) 6.0 grams in twelve days | Condition improved. |
| 12-7-30 to 3-14-31 | Negative (Weekly examinations) | | Condition improved.<br>Has three to four formed movements daily, no pain, no blood, no mucus. Blood pressure 132/84, pulse 64. Symptom-free. Gained sixteen pounds in weight. Subjectively improved. |
| 3-20-31 | +Strongyloides stercoralis | | Weight 159 pounds. |
| 3-28-31 | Negative | | |
| 4-18-31 | Negative | | Continues well. |
| 4-28 to 11-12-31 | Negative | | |

* Fresh stool and fixed wet iron hemotoxylin preparations routinely examined.
† Total "Carbarsone" (carbaminophenylarsonic acid) administered from 8-31-30 to 12-7-30 is 12.0 grams, or about 185 milligrams per kilo body weight without exhibition of toxic symptoms.

toxic is certainly commendable. Their remarks regarding the toxicity of emetin are certainly correct. However, it must be remembered that severe toxic effects of this drug are evidenced only when it is given in overdoses or injudiciously. The maximum dose should not exceed .65 grams given over a period of from two to three weeks and it should never under any circumstances be given to ambulant cases. Emetin is one of the most valuable drugs we have in the treatment of amebiasis, but it has distinct limitations. It is of the greatest value in controlling ulcerative lesions produced by the amebae, but it has practically no amebacidal properties if used alone. Amebae recur almost invariably after a treatment with this drug alone although the symptoms may remain absent for a long period of time. Combined with some of the arsenicals, which are amebacidal, increased effectiveness is obtained.

Their statement regarding the ineffectiveness of other drugs, I believe is quite true as regards a great many of the treatments advocated, but this fact in no way justifies the conclusion that no drugs or treatments have been advocated that are efficacious. I would say rather that the treatment of amebiasis if properly carried out has reached a stage of specificity closely approaching that of malaria.

In 1918 I published an article in the CAL. STATE JOUR. OF MED., Vol. 16, p. 240, on the treatment of twenty cases of amebiasis with a combination of emetin hydrochlorid and neoarsphenamin. The cases in this series were checked very carefully over a period ranging from several months to several years. I made the statement at that time that this combination was distinctly amebacidal and that about 80 per cent of cures would result from its use. Since that time I have treated several hundred cases with this combination and I will change my statement of results to 90 per cent of cures instead of 80 per cent.

The treatment as originally published has been modified somewhat in that the dosage of emetin hydrochlorid has been considerably reduced and the neoarsphenamin increased. Other preparations of arsenic are undoubtedly amebacidal to a high degree, for instance acetarsone. I have discontinued the use of this drug on account of the frequency with which toxic symptoms occurred.

A comparatively new drug which is also amebacidal is chiniofon, sold under the trade names of yatren and anayodin. I have used the preparation called anayodin quite extensively in the last few years and have not observed any toxic effects from it. When combined with neoarsphenamin, which may be administered rectally, the results in ambulatory cases have shown more than 90 per cent of cures. Anayodin may also be used in the treatment of dysenteric patients after the symptoms have been controlled with emetin, thus greatly reducing the amount of emetin necessary. The anayodin treatment to be effective must be given in sufficient dosage over a long enough period of time. In the treatment of ambulatory cases about two hundred pills of four grains each, representing a total of about fifty-three

grams of anayodin, is my average dose, given during a period of from four to six weeks. In addition, two or three doses of neoarsphenamin are given, usually by rectum, during the course of treatment. The appearance of diarrhea may necessitate the reduction of the dose of anayodin or its omission temporarily. It may be observed that this dosage of anayodin is about seven times larger than that used by mouth in the authors' case.

Rest, one of our best adjuncts in the treatment of intestinal disturbances, is almost completely lost sight of in most discussions of the treatment of amebiasis. Rest during treatment often is the deciding factor which makes for success. A patient should not be considered ambulatory just because he is able to walk. There is no question about the desirability of treating carriers or patients with mild symptoms as ambulatory, but if a patient has a disease which has caused him more or less discomfort or invalidism for many years, even though these symptoms are mild and occur periodically, he should be put to bed to be given his treatment.

With reference to the value of the case treated by the authors for the purpose of evaluating various remedies, I would seriously question the wisdom of estimating the effect of one drug when closely following another or, as in this case, many others. One remedy may destroy nearly all the amebae and leave those remaining in an attenuated condition so that the result of a succeeding treatment might be misinterpreted. I had such a case recently where at postmortem the amebae were found to exist only in an area about an inch and a half in diameter. Previously distant amebic ulcerations had been demonstrated through the sigmoidoscope.

The past history of the case described by the authors is not an unusual one. It shows intractability to treatment, but by no means justifies the conclusion that none of the drugs used were efficient. An understanding of the pathology of amebiasis shows clearly that we cannot expect to cure some cases unless several courses of treatment are used. In order to compare the value of various remedies the only satisfactory method is to treat a series of cases with each remedy in question, carefully checking the results. No doubt Doctors Anderson and Reed will do this, and I for one hope the drug they are using will prove to be of value.

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Doctor Anderson and Doctor Reed (Closing).—Doctor Kessel speaks from an unusually rich experience and many years of accurate observation. We feel, however, that his differentiation between amebic dysentery and "chronic amebiasis" is based on a wrong conception of the natural history of this disease. From the standpoint of the pathology, epidemiology and therapeutics of amebiasis, we feel strongly that James' dictum is correct, that the patient with amebic infection is a constant danger to himself and to others, and should always be treated. We feel that no symptom complex, dysenteric or otherwise, modifies the effectiveness of treatment and, therefore, should not modify the character of treatment. Doctor Kessel rightly refers to the dangers of emetin and its frequent ineffectiveness. Clinically, however, emetin is by no means specific for amebic ulceration. The usefulness of yatren will be discussed below. We have not been concerned about the action of any amebacidal drugs on other protozoa, as we consider their pathogenicity at least doubtful and in any case relatively negligible in comparison with *E. histolytica.* Stovarsol is decidedly unsatisfactory because of its high toxicity. Agreeing with James' opinion, we can consider only protozoölogic cure as the goal to be achieved.

Doctor Gunn's discussion illustrates nicely the very points which have led us to seek new drug agents for the cure of amebiasis. His reference to the dangers of emetin when used "in overdoses or injudiciously" is strong evidence for the need of a new and different drug. Our paper did not make the claim, nor conclude, that "no drugs or treatments have been advocated that are efficacious." Reference to the paper itself will show clearly the points on which all treatments advocated to date are *unsatisfactory.* The method of treatment advocated by Doctor Gunn illustrates this very point. In the first place, it includes an emetin course, with the attached risks that Doctor Gunn has emphasized. It is to be reiterated that even judicious use of emetin within average safe limits does *not* remove but only minimizes toxic effects. Secondly, it requires bed rest. This is expensive for the patient and often economically impossible. It also, like the emetin injections and the general prolonged length of treatment, adds seriously to the patient's cost in time and in money. Any type of treatment that adds seriously to the patient's cost in time, in drug cost and in medical fees, is decidedly unsatisfactory and should lead to search for better methods. Thirdly, the drug cost is high. Chiniofon, which is the official name under which some half-dozen proprietaries are marketed, is the name which should be used instead of yatren. It is essentially the same as anayodin which has less iodin content. The amount Doctor Gunn prescribes costs the patient, at retail, approximately $12. Ten grains of emetin in hypo tablets average $3 to the patient. Three doses of neoarsphenamin (0.9 gram) cost approximately $6. Thus the drug cost to the patient approximates $21. In addition the patient must pay for physician's visits and must lose much time, with only an 80 to 90 per cent chance of cure. Evidently a more effective treatment, costing the patient less than $2 complete for drugs, would be more satisfactory.

Our own experience with the older methods of treatment parallels that of Doctor Gunn in percentage of protozoölogic cures. In view of the high toxicity and expense of these methods, we can hardly agree that they have reached a degree of specificity approaching that in malaria. But even if such were the case they would still be unsatisfactory for the exact reasons enumerated and because the treatment of malaria itself has by no means reached a satisfactory state of specificity. Doctor Gunn's statement that a patient with a disease which has caused him more or less discomfort or invalidism for many years should be put to bed to be given his treatment can scarcely be accepted as a general rule in medical practice.

In the present paper it has been our aim to illustrate from a practical case the disadvantages of the older treatment of amebiasis. The discussions above confirm our belief that improved methods are needed. The advantage of an oral ambulatory method of low cost, low toxicity, and high efficiency would seem self-evident.

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## CHRONIC THYROIDITIS*

*By* Whitfield Crane, M. D.
*Oakland*

Discussion *by D. Schuyler Pulford, M. D., Woodland; Verne Carlton Hunt, M. D., Los Angeles; Clarence G. Toland, M. D., Los Angeles.*

THE problems arising in the diagnosis and treatment of thyroid dysfunction are of absorbing interest to the internist, surgeon, and pathologist. There is a great deal that we do not know, but with the fairly universal adoption of practical classifications of goiter the diagnosis and treatment of the well known types have been more or less standardized. There is, however, one peculiar disease entity of the thyroid that until the last few years has received comparatively little attention in this country. This is the

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condition known as chronic nonspecific thyroiditis or Riedel's disease.

This entity was first described by Riedel before the German Surgical Congress of 1896 as "a chronic inflammatory change in the thyroid gland with the final development of an iron-hard tumor simulating malignancy." Only isolated case reports following that appeared in the literature, thirty-five in all up to 1926. In that year Smith and Clute of Boston reported five cases from the Lahey Clinic, Searls and Bartlett seventeen cases from the University of California Hospital. Ewing cited four cases and accurately described the pathologic changes. In reviewing the thyroidectomies at the Mayo Clinic over a five-year period, I collected twenty-eight cases diagnosed by the pathologist at the time of operation as chronic primary thyroiditis.

### SYMPTOMS AND SIGNS

A typical case is characterized by the development of a rapidly growing fairly uniform enlargement of the gland with or without mild hyperthyroid symptoms; an infiltrating type of growth, extremely firm or hard on palpation, causing tracheal pressure with increasingly marked symptoms of choking and dyspnea. A knowledge of the pathologic changes involved is essential to the understanding of this disease.

### HISTOLOGY OF THE NORMAL THYROID

Let us first consider the histology of the normal thyroid. It is composed of acini lined by cuboidal epithelium, the acini being filled with colloid. The supporting framework is made up of connective tissue, in which run the blood and lymph vessels. In order to determine the amount of inflammatory change in normal thyroids I made a microscopic study of fifty glands secured at autopsy on patients between the ages of fifteen and sixty. It was found that one-third of these specimens were devoid of any inflammatory change; the others, all in the later decades of life, showing only mild evidence of interacinar stroma increase with only occasional slight round cell infiltration. It can be safely said, then, that inflammatory change is not found in normal thyroids to any degree.

### PATHOLOGY

Two entirely dissimilar microscopic pictures have been described in chronic thyroiditis: one, the deposition of lymphoid tissue in the gland as shown by Hashimoto in 1912; and two, the replacement of the acini by fibrous connective tissue as described by Riedel. Ewing has clarified this situation by his reasoning that these markedly different pictures merely represent different stages in the same disease.

There is first a marked lymphocytic infiltration of the stroma with the final development of numerous lymphoid follicles; typical germ centers composed of lymphoblasts, reticular cells and mitotic figures. This progresses with a gradual compression and obliteration of the functioning gland tissue until we see practically the whole gland a solid mass of lymphoid tissue. This is the "struma lymphomatosa" of Hashimoto. Gradually connective tissue replaces the cellular infiltration and we finally find a solid mass of fibrous tissue surrounding small islands of the few remaining acini. This, in brief, carries the pathologic changes through to the final development of the iron-hard goiter or ligneous thyroiditis as described in the literature.

Grossly the specimens are characterized by a fairly uniform enlargement of the gland distinguished by an abnormal firmness of structure, in some cases of such marked degree that the tissue cuts with difficulty. The cut surfaces show an even beefsteak-like appearance similar to that seen in exophthalmic goiter, except that they are paler in color, dry, with no secretion present and dense fibrous bands very prominent. Those composed of lymphoid tissue are very friable, pale in color and dry on the cut surface. A particular feature of the growth is the constant tendency for the inflammatory process to spread and infiltrate the superficial and prevertebral facias and muscles of the neck.

The point has been raised by several observers that because evidence of inflammatory change is found in hyperplastic goiters, that chronic thyroiditis is not a distinct entity, but simply a stage of hyperplasia. With this point in mind I examined microscopically 110 exophthalmic goiters, 50 toxic adenomas, and 40 nontoxic adenomas. While evidence of inflammatory change is present to some degree in exophthalmic goiter and toxic adenoma, this occurs in less than 50 per cent and is never marked. It seems to me that this is sufficient proof of the fact that primary chronic thyroiditis is a distinct clinical entity. Searls has also brought out this point, and I certainly agree with him.

### COMMENTS ON PATIENTS UNDER OBSERVATION

Of our twenty-eight cases twenty-four, or 85.7 per cent, were females and four, or 14.3 per cent, were males. The oldest patient was sixty-one years, the youngest twenty-four years, the average being forty-one years.

Twenty-one, or 75 per cent, had no history of previous thyroid disturbance prior to the onset of the present symptoms. Seven, or 25 per cent, had had a previous symptomless goiter. The duration of these goiters before the onset of the secondary enlargement varied from five to fifteen years, with an average duration of nine years. In all of the twenty-eight cases the symptoms of thyroiditis were present for comparatively a short time. The duration of symptoms from the time enlargement of the gland had been noticed until the patients presented themselves for examination ranged from three months to one year, the average being five months.

The clinical manifestations in these patients were fairly uniform. There was a history of progressive, rather uniform enlargement of the thyroid, accompanied in a few instances by mild evidence of toxicity, nervousness, palpitation, etc., although these symptoms were never present to a marked degree. Exophthalmos, thrill and bruit

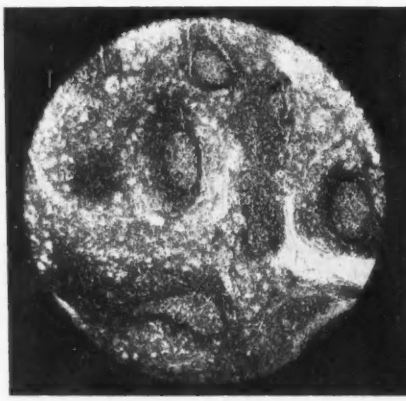

Fig. 1.—A section of typical lymphoid thyroiditis, showing the numerous germ centers. X-50.

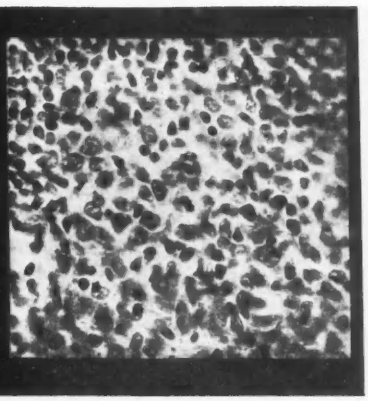

Fig. 2.—High-power section through a germ center, showing lymphocytes, lymphoblasts, and mitotic figures. X-400.

were never present. Searls has brought out the point that absorption of inflammatory products, rather than thyrotoxicosis, may account for these occasional mild toxic symptoms. Many suffered from tenderness over the thyroid, with pains radiating to the ears and angles of the jaws. Hoarseness and progressive dyspnea, however, were the predominating features in the advanced patients, due to the gradual compression of the trachea by the contracting scar tissue of the isthmus. Hoarseness is caused by recurrent laryngeal involvement in the spreading inflammatory process. Dysphagia was not present in any of our patients. If it is present it is very suggestive of malignancy.

These patients are for the most part in fairly good general health, and although some give a history of a mild degree of apparent hyperthyroidism they do not show the marked signs and symptoms attendant on hyperplasia. The basal metabolic rate rarely is distinctive. This was taken in all our cases and varied from minus 14 to plus 20, the average being plus 7.

The tumor itself usually presents particular characteristics, which may give a clue to the condition. In the majority of instances the gland is entirely involved. The tumor is not large, but seems to be fixed and spreads and infiltrates the muscles and superficial facias of the neck. The uniform firmness or hardness of the growth is undoubtedly the most noteworthy finding. In advanced cases it gives a stony or woody feel on palpation which accounts for the name "woody thyroiditis." The surface is smooth, although occasionally indurated areas may give the impression of adenomata. The overlying skin is always intact and nonadherent, and the regional lymph nodes are not involved.

The clinical diagnosis of primary thyroiditis is difficult. The typical well-advanced case is, of course, usually mistaken for malignancy. The patients who present themselves comparatively early in the course of the disease, with or without beginning symptoms of hyperthyroidism, are apt to be given a clinical diagnosis of hyperplastic, toxic or nontoxic adenomatous goiter, especially if there is some alteration from normal of the basal metabolic rate.

All the twenty-eight patients came to operation. Nineteen had a double resection of the gland done. The remaining nine patients in whom either the clinical or surgical diagnosis was chronic thyroiditis had either single resection or biopsy with cuneiform resection of the isthmus.

One patient died in the hospital of pneumonia; of the remaining twenty-seven we were able at the end of six months to trace sixteen, most of whom returned for a basal metabolic rate check-up. Of these sixteen, eight, or 50 per cent, had developed well-marked myxedema, which necessitated the continuous administration of thyroid extract or thyroxin. The average basal metabolic rate was minus 20. Six of these eight patients had had a double resection done, two single resections. These two latter patients showed, however, on pathologic examination, practically an entire replacement of the gland with lymphoid tissue. All the sixteen patients, however, had obtained relief from pressure symptoms on the trachea and most of them were free of the mild toxic symptoms they had on admission.

In view of the fact that the clinical diagnosis of this condition is extremely difficult, the responsibility rests largely with the surgeon. It

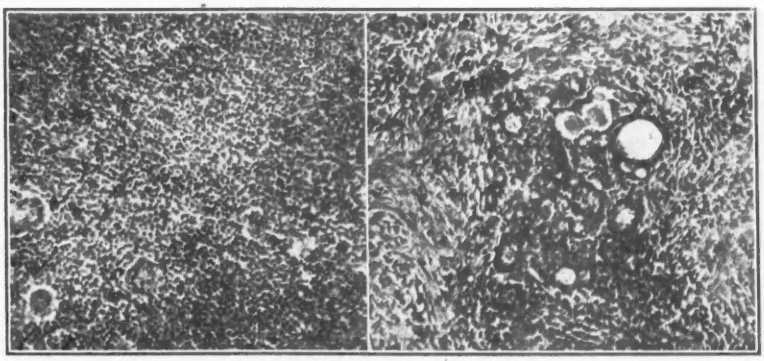

Fig. 3.—A section showing diffuse lymphoid infiltration. A few acini are seen, but practically the whole gland is replaced by lymphoid tissue. X-120.

Fig. 4.—A typical section of fibrous thyroiditis, showing compression of acini by bands of dense fibrous tissue, with inflammatory cell infiltration. The entire gland has the same structure. X-120.

would seem logical that the procedure of choice when thyroiditis is suspected, either clinically or surgically, is to do a biopsy and obtain an immediate diagnosis by the fresh frozen section method. If the diagnosis is confirmed by the pathologist as primary thyroiditis a resection of the isthmus or single resection to free the trachea from compression should be done.

### ETIOLOGY

A few words regarding the etiology. Nothing definite is known. Tuberculosis, syphilis, and actinomycosis have been ruled out. Searls reports *Streptococcus viridans* recovered from one specimen and from the patient's throat culture. From the fact that many of these patients give histories of mouth and throat infection it seems as if this would be the most logical source of trouble. However, there is nothing definite.

### SUMMARY

To sum up, then, we may say:

1. Chronic primary thyroiditis is a definite entity characterized by an inflammatory cellular infiltration of the gland with resultant massive fibrous tissue replacement of the acini.

2. The clinical diagnosis is difficult, most cases being mistaken for malignancy.

3. The procedure of choice is biopsy and division of the isthmus, or single resection, because of the marked tendency to myxedema following classical double resection of the gland.

Wakefield Building.

### DISCUSSION

D. Schuyler Pulford, M. D. (Woodland).—Doctor Crane states briefly but completely the known facts about chronic thyroiditis. He reports a large group of cases well studied and followed up. More important, however, is his contrast study of (1) the chronic thyroiditis gland; (2) the hyperplastic goiter type of gland; and (3) the normal thyroid, as removed at autopsy.

Of the 588 articles published in 1930 on the thyroid and its diseases, nineteen, or 3.2 per cent, were on thyroiditis. Only one, however, was on Reidel's thyroiditis, the other types being: acute nonsuppurative, seven; acute purulent, five; lues, two; tuberculosis, three; and the pathogenesis of thyroiditis, one. This gives a fair index of the frequency of the different types. It seems evident, though, that many cases of Reidel's thyroiditis go unreported.

Our cases at Woodland have been two acute suppurative, three acute nonssuppurative, one actinomycosis, and three chronic thyroiditis with hypothyroidism associated with or following other chronic infections.

From the standpoint of the tissue pathologist little difficulty is encountered in correctly diagnosing primary chronic thyroiditis. This should be done at the operating table with fresh tissue methods, as the surgeon may mistake a malignancy for a thyroiditis or vice versa and the operative procedure is different in each case. Amyloid disease of the thyroid gland is encountered occasionally, but should be recognized by its "bacon-like" gross appearance and the fact that it does not bleed during operation. It is usually part of a general amyloidosis but may occur alone. The study of excised thyroid glands shows that the type of inflammatory reaction seen in hyperfunctioning thyroid glands is mostly a lymphoid tissue increase and never a fibrous tissue replacement as described by Reidel. Seeing no transition state between hyperthyroid goiters and Reidel's thyroiditis, even after hyperthyroidism has come and gone, substantiates the claim that chronic thyroiditis is a primary disease entity.

From the standpoint of the clinician emphasis should be placed on the necessity of early exploratory operation to rule out malignancy and that hypothyroidism or myxedema is to be expected in all cases. In the few cases I have seen, pain in the neck was a prominent complaint. A pulse rate out of proportion to the illness of the patient and a nervousness that might have been mistaken for hyperthyroidism, had not the B. M. R. guided one, were also striking features. Acute thyroiditis, either with or without suppuration, is a disease distinct from Reidel's thyroiditis. Other clinical points worth mentioning are that too much gland is often removed; tuberculous thyroiditis usually has another focus and these patients usually have an associated hyperthyroidism. Lues also is never primary in the thyroid glands.

I would like to add in closing that in reading Doctor Crane's brief remarks on thyroiditis one gets no idea of the time and labor put in by him in studying the literally hundreds of sections of thyroid glands of normal, hyperplastic and thyroiditis cases. He is one of the few physicians who is well trained in surgical pathology. This type of surgeon should contribute more often to the medical literature.

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Verne Carlton Hunt, M. D. (555 Roosevelt Building, Los Angeles).—I should like to emphasize the statement Doctor Crane has made that the clinical diagnosis of thyroiditis is most difficult and when it does exist may only be suspected in the differential diagnosis when the firmness of the gland may likewise suggest the probability of malignancy. The true nature of the condition can only be determined by exploration and microscopic section.

Accurate tissue diagnosis is most important in the event that thyroidectomy may be considered advisable, for certainly in the presence of thyroiditis if partial thyroidectomy is done a much larger amount of gland tissue should be left *in situ* than for any other condition of the thyroid for which thyroidectomy is done.

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Clarence G. Toland, M. D. (902 Wilshire Medical Building, Los Angeles).—Of the rarer types of enlargement of the thyroid gland, ligneous thyroiditis perhaps most strongly intrigues our interest.

There is so little we know about the disease; its etiology is obscure, its clinical recognition is uncertain, and the treatment is prone to yield unsatisfactory results.

Cases of this type occur too infrequently to permit thorough investigations, with the result that practically nothing has been contributed to their etiology.

On clinical examination the extreme hardness of the enlargement, with its infiltration into the surrounding structures, readily leads one to suspect a malignancy rather than a thyroiditis. Syphilis of the thyroid also very closely simulates the condition, and we must not fail to investigate the blood serum in these cases.

It should be remembered that occasionally a spontaneous regression of the tumor will occur, with disappearance of the symptoms.

Doctor Crane's suggestion that an immediate frozen section and microscopic examination be made before proceeding with the operation is a valuable one. The gross characteristics of the gland tend to urge the operator toward a too radical thyroid resection, while an immediate microscopic diagnosis will lead to a more conservative procedure. Thus valuable thyroid tissue will be saved and the patient spared the distress and inconvenience of a later hypothyroidism.

Doctor Crane's study of a relatively large group of cases has materially contributed to a more thorough understanding of chronic thyroiditis, and in addition he has stimulated the interest and thought of his colleagues so that further research may be engendered.

# THE LURE OF MEDICAL HISTORY

## ESSAYS ON THE HISTORY OF EMBRYOLOGY*

### OLD IDEAS REGARDING SEX, FERTILIZATION, AND PROCREATION

*By* A. W. MEYER, M. D.
*Stanford University*

WE know from the oldest of myths and sagas that even our remotest ancestors were curious about their origin and development. They could not help but be, and when man first began to speculate upon the origin of the universe he could not have failed to speculate also regarding his own origin. Hence, in a certain sense, the history of embryology is contemporaneous with human thought, and, although I do not mean to imply that the habit of systematic observation goes back to the earliest days of man, even primitive man must have begun to think regarding what he saw around himself and what he experienced within himself as soon as he began to think at all.

The history of embryology should be contemporary with that of gross human anatomy, for what could arouse more curiosity than prenatal life or the newborn. There must of necessity have been abundant opportunity for observations upon such things as bird and mammalian embryos in connection with the search for food and the use of eggs for food. In the days when human relations were primitive and life was rude, disembowelings of man and animals cannot have been rare, and fetuses must have been a rather common sight. Moreover, there is reason to believe that the examination of the unborn was then not hedged about by restrictions as was that of the dissection of the dead of any age in postnatal life. The bodies of fetuses born prematurely, unless very near term, usually were not regarded as sacred, as were those that died after a mature birth, an attitude which survives and hampers us even today.

Since the very young embryos of all mammals are so very similar, and since pregnant human beings, as well as animals, were often "put to the sword," opportunity for observations on prenatal development cannot have been lacking even in primitive times. If we recall that man for ages past used the eggs of fowl and the flesh of animals for food, and used human sacrifies, the correctness of this inference will be abundantly evident.

#### EARLY SPECULATIONS

It is curious that the history of embryology has received so little attention and that no full treatise on it exists in any language. This may be partly due to the fact that the entire history of science was neglected until a very recent date, but the chief explanation probably lies in the relatively recent development of embryology itself. Until we learned how to preserve embryos and imbed, cut, and stain them and learned to reconstruct them graphically or in paper or wax, progress was very difficult.

When tracing the history of embryologic ideas, one is impressed with the fact that anything approaching a correct view of individual development is a very recent thing indeed. This is partly due to the fact that men preferred to trust their minds rather than their eyes and hands and because speculation was easier than observation from the very beginning. It has always been more convenient to use the subjective than the objective method. Anyone can sit and think upon anything he chooses, anywhere and at any time, without the least inconvenience except that of thinking, but in order to make observations it is necessary to bestir oneself, and experimentation is especially troublesome. Hence, speculations long were numerous but observations few, and John Hunter's advice, "Don't think. Try," long remained unobserved and experimental embryology hence is mainly a child of today.

When one recalls the long era during which human beings have existed upon earth and how brutish the life during much of that period has been, it would be strange, indeed, if someone did not note tens of thousands of years ago that the earlier stages in the development of mammals are very similar. It is difficult, indeed, to understand how some of the very fanciful ideas of man's origin could have appealed to or satisfied anyone.

The oldest conceptions on everything must necessarily remain unknown to us, and it is scarcely possible to realize fully the difficulties presented by such questions as that of sex and procreation to early writers and investigators. The great Haller began the chapter on conception in his justly celebrated work entitled "First Lines of Physiology" by saying, "This is a very arduous investigation, as we propose to discover the changes which take place in the inward parts of woman when a new creature begins to germinate. . . . We shall relate, in the first place, therefore, those things which experience shows to be true; and then to add those hypotheses by which learned men have endeavored to supply such things as are not evident from the subject itself. How few things are ascertained on this subject, and how difficult they are ascertained, I have learned by too much experience." As late as 1775 this great physiologist, in the introduction to his physiology, is said to have declared that nature hides the early beginnings of the new individual behind dense blackness and reveals nothing about the ovum, which she permits to be incubated.† If this was the case in 1775, then

* From the department of anatomy, Stanford University.
*This paper will be printed in three or more parts. References will be printed with the last article of the series or in the reprints. This is the first paper of the series.

† Although this statement is repeated upon good authority, I was unable to find it in the introduction to the editions of Haller's "Physiology" of 1747, 1751, and 1764. However, I did find a similar expression in the introduction to the Dissertations of Spallanzani, where the latter says, "In times past, I acknowledge that generation, both in animals and plants, was involved in darkness impenetrable to the human eye; but since the appearance of Haller and Bonnet, this gloom has been rendered much less thick." Since Erasmus Darwin in 1801 also says that "The process of generation is still involved in impenetrable obscurity," it is not improbable that this expression may have been handed down from the past.

Fig. 1.—The commonest, though probably not the best, likeness of Redi.

how much more it must have been true in the days of Aristotle who, when greatly puzzled about the generation of bees, wisely wrote: "The facts have not yet been sufficiently grasped; if ever they are, then credit must be given to observation rather than to theories, and to theories only if what they affirm agrees with observed facts." It is well for us not to forget that Aristotle based his belief in the origin of fleas from snow, animals from fire, eels from mud, and fishes and insects from various other substances, upon conclusions drawn from observations. According to Aristotle, ". . . Nature passes in an unbroken manner from inanimate things to animals, through forms of life which are not animals, in such a way that one class seems to differ very little from another in the part where they border on each other." Lones, after whom this sentence is quoted, says that this idea was foreshadowed by other Greek philosophers and that the vital principle, which according to Aristotle could generate life out of "earth, mud, sand, foam, or dew" was "related to living bodies" as form to matter, or sight to the eye, and that "if an eye were a living being, then sight would be its vital principle." Aristotle knew the placenta of a shark, which Johannes Mueller rediscovered in 1839, and it need not surprise one that he thought animals had a vegetal and an animal period of existence, the former persisting up to the development of the heart.

It is pertinent to recall here that Bastian, a leading British biologist who, in the middle of the nineteenth century, reached the conclusion that bacteria can arise spontaneously in sterilized solution, did so on the basis of experiment. No wonder that this announcement evoked the ejaculation "Mon Dieu! mais c'est non possible!" from Pasteur during the course of an international congress of biologists, held in London, for Pasteur had finally shown that such a thing was indeed impossible. As is well known now, the difficulty with Bastian's experiments lay in the inadequate sterilization of his solutions.

### OLD IDEA OF SPONTANEOUS GENERATION

As is well known, the old idea of spontaneous generation lives on among the laity today. Who has not heard that thread worms arise from the hairs from the manes and tails of horses, which accidentally fell into the watering trough while the animals were drinking. Indeed, many of the laity still hold to the words of Ross, uttered in the seventeenth century in reproach to Sir Thomas Browne's disbelief in spontaneous generation. The former wrote, "So may he doubt whether in cheese and timber worms are generated; or if beetles or wasps in cow's dung; or if butterflies, locusts, grasshoppers, shellfish, snails, eels, and such like be procreated of putrefied matter, which is apt to receive the form of a creature to which it is by formative power disposed. To question this is to question reason, sense, and experience. If he doubts this, let him go to Egypt and there find the fields swarming with mice, begot of mud of the Nilus, to the great calamity of the inhabitants."

In spite of Redi's crucial experiments on the generation of some insects, the idea that animals could arise without parentage lived on long thereafter even among leaders in science such as Redi and Harvey. It was not rejected by "natural philosophers," it seems, until 1715, in which year an English natural philosopher, G. Cheyne, wrote: "Nobody nowadays that understands anything of nature or philosophizing can so much as imagine that any animal, how object soever, can be produced by an equivocal generation or without of male and female parents in the same or in two different animals. . . . I shall have occasion in the following chapter to make it evident that every generated animal is produced from a preëxistent animalcule of the same species, and that every vegetable arises from a small plant of the same kind, and it is impossible, it can be otherwise upon our adversary's scheme of admitting nothing but matter motion; for if animals and vegetables cannot be produced from these (and I have clearly proved they cannot) they must of necessity have been from all Eternity." Redi himself wrote: "Before returning to my argument, I cannot refrain from saying that I do not consider it a great sin against philosophy to maintain that the worms of plants are created by the same natural principle that produces the fruits of the plants. . . ." Redi

Fig. 2.—A reproduction of an illustration from Redi representing the development of the "cherry fly" as he knew it. Redi could not ascertain or understand how the egg which gave rise to the "worm" could get into the cherry.

could not learn how the eggs of insects could be introduced into fruit, and made the above comment in connection with Fig. 2 here reproduced.

In examining and judging the scientific ideas of older writers it always is necessary to recall the temper of the time in which they lived, the store of accumulated knowledge and the available methods at the disposal of investigators. The great men of the past whose scientific conceptions on sex, pregnancy, and prenatal development often seem so strange to us did not lack intellect, but proven experimental methods and accumulated knowledge. They lacked a scientific background—a store of facts—and were groping in the dark far more than are we of today, regarding some of the very problems which perplexed them. Even we are still largely upon an uncharted sea regarding questions of sex, heredity, etc., and some future age will probably consider our speculations upon these things quite as peculiar as we regard those of our distant forbears. He who fails to consider pioneers in their proper surroundings will hence do them a great injustice. Even Harvey and Redi allowed for the occurrence of equivocal generation because they could not account for all forms of animal life on any other basis even as today it remains undecided whether the bacteriophage is a living or a nonliving agent.

## OLDEST RECORDED IDEAS ABOUT PROCREATION

The oldest recorded idea about procreation is that man as well as other animals arose from putrescent material, from excrements, through the agency of ferments and decomposition, and this idea is still contained in the customary funeral services of the Christian church. Saint Paul, writing in Corinthians, said that we had our origin in corruption, and Jonah asserted that the Lord raised him out of corruption. What our early forbears saw happening in dead bodies and in refuse near their habitations or in the fields probably was partly responsible for the idea that life arises in corruption.

The occurrence of worms in manure heaps was attributed to the presence of the vital spirit still contained in "animal residuum" or feces, though it is not at all unlikely that the idea that putrefaction has generative power may have been suggested by the non-aesthetic aspects of mammalian reproduction; by forbidding geographical relationships of some of the reproductive organs of mammals. Although it is not likely that many human beings were fastidious during the early days of civilization, certain forbidding aspects could not escape attention and long before the days of Sir Thomas Browne there must have been those who felt, if not expressed, his repugnance to our "trivial and vulgar form of coition" and shared his wish that human beings might procreate like trees instead.

In the alchemical treatise Splendor Solis, by Trismosin, which appeared in 1582, this mystic teacher of Paracelsus, and seeker for the philosopher's stone, still adopted the idea that all life came out of putrefaction, for he wrote: "By way of allegory we take the hen's egg; in this the form of the chicken cannot take shape without the presence and aid of accidental form, which is the intermixture of the red with the white, by virtue of the heat coming from the hatching hen, and although the egg is the hen's material, nevertheless it cannot develop either its real or accidental form otherwise than by putrefaction, which is caused by the influence of the warmth. . . . In the middle of the Yolk there is the Fifth Element, out of which the young chicken bursts and grows. Thus we see in the egg all the elements combined with matter to form a source of perfect nature."

Empedocles it seems spoke of a genus "oviparum arboreum" or egg-bearing tree, and Fabricius, the teacher of Harvey, declared: "Now that the contemplation of the formation of the chick from the egg is of very ample scope, appears from this, that the greater number of animals are produced from ova. Passing by almost all insects and the whole of the less perfect animals, which are obviously produced from eggs, the greater number of the more perfect are also engendered from eggs." And then he goes on to particularize: "All feathered creatures; fishes likewise, with the single exception of the whale tribes;

crustacea, testacea, and all mollusca; among land animals, reptiles, millepeds, and all creeping things; and among quadrupeds, the entire tribe of lizards. . . . " "The foetus of animals is engendered in one case from an ovum, in another from the seminal fluid, in a third from putrefaction: whence some creatures are oviparous, others viviparous, and yet others, born of putrefaction or by the spontaneous act of nature, automatically." Nevertheless, Fabricius described the fetal membranes and apparently saw and described the ovarian vesicles later rediscovered by de Graaf and named after the latter.

Anyone who has read Redi will recall that he states that according to Lactantius, the Stoics believed that human beings sprang forth from the earth as mushrooms do in soil which is rich, warm, and moist. The Egyptians, Ethiopians, Phrygians, Phoenicians, and Athenians each claimed to be the ancestors of the human race, and it is recorded that the Athenians wore golden grasshoppers in their hair to show that they themselves arose directly from the soil even as grasshoppers were supposed to do at that time.

Mother earth was at first regarded as a clumsy worker so that the earliest creatures came "hastily and in disorder from her womb," there being many monsters among them. "But at last the great mother, perceiving that such monstrosities were neither good nor likely to endure, and having become more expert in the art of generation, succeeded in producing men and animals according to their species. Democritus bears witness that men first appeared in the form of small worms, which little by little assumed human shape; or, as Anaximander relates, on escaping from the womb of Earth they were enveloped in a kind of rough, spiny skin, not unlike the burr of a chestnut. After a long period of fertility, during which many monstrous and marvelous generations were brought forth, the Earth Mother became at last exhausted and sterile and lost her power of producing men and the larger animals, still she retained enough vigor to bring forth (besides plants that are presumed to be generated spontaneously) certain small creatures such as flies, wasps, spiders, ants, scorpions, and all the other terrestrial and aerial insects, called by the Greeks "entomadzoa" and by the Latins, "insecta animalia." The schools, both ancient and modern, all agree in this, and constantly teach that the Earth has continued to produce these creatures and will produce them so long as she exists. They do not, however, agree as to the manner in which these insects are generated, nor how life is communicated to them; for they say that not only does the Earth possess this occult power, but that it is possessed by all animals living and dead, also by all things produced from the Earth, and finally by those which are about to decay and return to dust."

### THE THEORY OF METAMORPHOSIS

The idea that life arises in corruption later became known as that of metamorphosis, and survived till the middle of the seventeenth century or the time of William Harvey, who wrote: "Whilst the higher animals produced from eggs are perfected by a succession of parts, the lower creatures that arise in this way, or that are formed by metamorphosis, are reproduced at one effort, as it were, and entire." It is surprising that Harvey, who filled so important a place in the history of embryology, also allowed that "imperfect animals" might arise "out of putrescent material, the drying of a moist substance or the moistening of a dry one." It matters not what Harvey meant by imperfect animals, although it may be recalled that he regarded the lion and cock as perfect and that imperfect animals were those that were not known to arise in their final form, directly from an egg, but passed through an intermediate stage or scolex of Aristotle, such as the pupal or larval form. What matters to us is that one of the pioneers in embryology still felt prompted to recognize putrefaction as a possible source of animal life. Although Harvey is usually considered the author of the phrase "omne vivum ex ovo," this phrase has not been found in his writings. However, the idea was dawning there—and that is the important thing—for Harvey declared: "We, however, maintain (and shall take care to show that it is so), that all animals whatsoever, even the viviparous, and man himself not excepted, are produced from ova; that the first conception, from which the foetus proceeds in all, is an ovum of one description or another, as well as the seeds of all kinds of plants. . . . The history of the egg is therefore of the widest scope, inasmuch as it illustrates generation of every description. We shall, therefore, begin by showing where, whence, and how eggs are produced; and then inquire by what mean and order and successive steps the foetus or chick is formed and perfected in and from the egg."

The idea that lay behind the conception of metamorphosis was in a measure the same as that upon which the earlier idea of equivocal or spontaneous generation was based, but according to the older doctrine life could arise only from putrescent material, according to the newer, also from inorganic substances. Since putrescent material is of necessity organic, the idea of the origin of life from the inorganic was an addition which faces us today. In older literature two forms of generation, the univocal and equivocal, are spoken of. Anything generated univocally arose from a thing of the same kind and a creature which arose equivocally was thought to arise spontaneously from quite different substances.

According to Esser, Susruta also was a preformationist and Caraka (or Charaka) is said to have had a similar conception. Vedic writers from 500 B. C. held that the conceptus forms from the union of sperm and blood from coitus during menstruation. In the Garba-Upanishad or Secret Teachings on the Embryo, it is stated that

a nodule appears in one night; a vesicle in seven and a node in a fortnight. This node is said to become attached in one month, the head appearing in two months, the feet in three, the tarsals, abdomen and hips in four, the vertebral column in five, and the nose, eyes and ears in the sixth. The soul was said to enter during the seventh month.

Nothing seems to be known regarding the conceptions upon development from the old Syrian and Egyptian civilizations, but it is well to remember that this does not imply that these people did not concern themselves with these outstanding matters. More definite records of an interest in and some understanding of the problem of ontogenesis seem to be found in the writings of the ancient Greeks, many of whose conceptions fortunately are preserved for us. It is true that Francis Bacon wrote:

"Now, from the systems of the Greeks and their subordinate divisions in particular branches of the sciences during so long a period, scarcely one single experiment can be culled that has a tendency to elevate or assist mankind, and can be fairly set down to the speculations and doctrines of their philosophy. Celsus candidly and wisely confesses as much, when he observes that experiments were first discovered in medicine, and that men afterwards built their philosophical systems upon them, and searched for the assigned causes, instead of the inverse method of discovering and deriving experiments from philosophy and the knowledge of causes; it is not, therefore, wonderful that the Egyptians (who bestowed divinity and sacred honors on the authors of new inventions) should have consecrated more images of brutes than of men, for the brutes by their natural instinct made many discoveries, whilst men derived but few from discussion and the conclusions of reason."

The earliest Greek ideas came from the early philosophers, but their reflections could not form a continuous story, or even roughly approximate the truth, for the actual story of prenatal development is too intricate to be formulated by mere speculation. The important thing for us, however, is the fact that these older people attempted to obtain light on the problem of prenatal development and that speculations upon the subject recur in so many of their writings. Among the problems which they considered were those of the origin and nature of the genetic substances, of the rôle of the sexes in procreation; of the determination and the causes of sex and of the nutrition of the fetus. They also speculated as to which of the organs of the body develops first or plays a guiding rôle. This question once caused a great deal of controversy, and was spoken of as the question of the primacy of the organs. The heart, the liver, and the brain each in turn was regarded as the most important or influential or leading organ in development.

Department of Anatomy, Stanford University.

(To be continued)

# CLINICAL NOTES AND CASE REPORTS

## SYPHILIS

### IN RELATION TO OCCUPATIONAL INJURIES

*By* HARRY E. ALDERSON, M. D.
*San Francisco*

TWO recent cases of late lues in our practice presented industrial features which are worth recording. It is well known that old luetics are apt to develop gummata at sites of traumatism. When this occurs as a result of injuries sustained at work the case may be classed as "occupational" until the lesions are eradicated by treatment.

The following two case records are of interest in this connection:

Mr. C. C. (No. 25948), a Mexican carpenter, thirty-nine years old, presented a typical non-ulcerating gumma extending across the left upper orbital margin. There was a similar smaller lesion at the inner end of the right eyebrow which had been present for several months. The former lesion appeared shortly after the patient was injured in that spot by a piece of lumber on which he was working. An abrasion resulted and it never healed, resulting finally in a typical syphiloma. There was no history of syphilis and the only other evidence found was a strongly positive blood Wassermann. Under neoarsphenamin and bismuth the lesions disappeared.

* * *

Mr. P. C. (No. 25190), an Italian laborer, thirty years old, presented a typical nonulcerating syphiloma at the right inner canthus. His blood Wassermann was strongly positive. It was impossible to obtain a history or other evidence of syphilis. About two months previously, while cutting wood with a "rip saw" a splinter of wood struck the side of his nose near his eye. The patient pulled out the splinter and there was a little bleeding. The wound never healed and the syphiloma gradually developed. Under neoarsphenamin and bismuth injections it subsided rapidly.

In each of these two cases responsibility was accepted by the insurance carriers and the necessary treatment *to eradicate the lesions only* was authorized.

490 Post Street.

## A FOUR-BLADED VAGINAL SPECULUM*

*By* SAMUEL HANSON, M. D.
*Stockton*

IN cases of great vaginal relaxation a good exposure of the cervix for purposes of examination or treatment can be gained only by means of a four-bladed speculum. An instrument of this type was recently devised by Nelson [1] which appears to be very satisfactory. However, it occurred to me that a special instrument is not necessary for this purpose, and that equally good results can be obtained with an instrument formed by the combination of two Graves' bivalve specula. This can be accomplished very readily as follows:

A Graves' speculum is introduced into the vagina in the usual manner. A second Graves' speculum of the same size or smaller is inserted and snugly adjusted within the first one so that

* From the San Joaquin General Hospital.

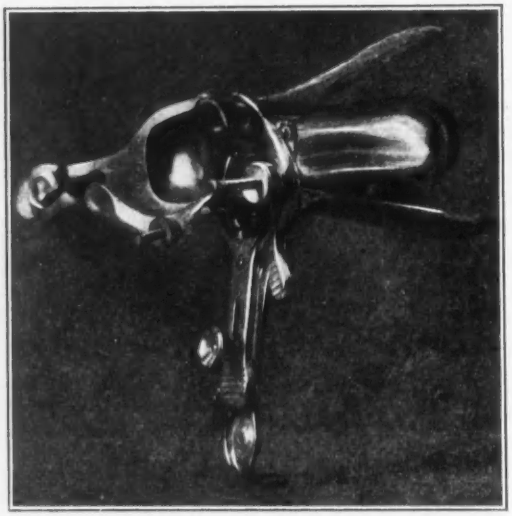

Fig. 1.—A four-bladed vaginal speculum.

its blades will open freely in a horizontal plane (Fig. 1). The protruding lateral vaginal walls can then be well retracted and a very clear view of the cervix secured.

1009 Medico-Dental Building.

REFERENCE

1. Am. J. Obst. and Gynec., 17:112, 1929.

## ACTINOMYCOSIS OF PANCREAS

REPORT OF CASE

*By* H. H. Parsons, M. D.
*San Bernardino*

A SURVEY of available literature fails to disclose a report of a case of pancreatic actinomycosis, so I am submitting the following for record.

A married woman, thirty-five years of age, who had never lived in the country, was taken sick in November 1927 with what she called indigestion. These attacks were mild and ceased after a few days. On January 6, 1928, she developed somewhat similar symptoms, but they were more severe and were accompanied by vomiting, epigastric pain, and marked constipation. These symptoms continued and on January 11 the pain became excruciating, the vomiting persistent, and there was complete obstipation. At this time I, with Drs. C. N. Greusel and Ross C. Martin, was called to see the patient.

REPORT OF CASE

I found a well-nourished woman, apparently in shock, vomiting and complaining of severe epigastric pain. The pulse was 120 and the temperature 99.4 degrees. The abdomen was but slightly distended and there was only scant rigidity in the epigastrium, but there was marked tenderness all over the epigastric region, the lower limit of tenderness being well defined by a transverse line just above the umbilicus.

The white blood count was 41,200. The urine had specific gravity of 1017, was acid and contained no sugar. There was a trace of albumen, a few hyaline casts, red cells and pus cells. Acetone and diacetic acid were present in large amounts.

As the patient had had a previous section a diagnosis of intestinal obstruction was made, operation advised, accepted and carried out at once.

A midline epigastric incision was made and on opening the peritoneum clear fluid was found. No obstructive lesion could be found. The gall-bladder contained a few small stones, but the ducts were free. No stomach lesions were found, but on elevating the stomach the pancreatic area was found to be edematous. This was a mucous edema and not serous. This edema extended over the pancreas and retroperitoneally along the root of the mesentery and into the gastrohepatic omentum. This mucous substance was streaked with black.

On exposing the pancreas it was found to be of a yellow color with dirty black areas scattered through it. The pancreas was not hard and was but slightly enlarged. A diagnosis of pancreatic necrosis was made and tube drainage to the pancreas instituted, the retroperitoneum being sutured about the tube and the incision being closed up to the tube.

For about twenty-four hours she was in a very critical condition, being pulseless most of the time. However, she finally responded to stimulants and intravenous glucose solution.

For about a week the discharge consisted of the thick mucous material streaked with black, when the character of the discharge became purulent and profuse in amount. With this change in the character of the discharge there appeared in the pus small rounded masses from smaller than pin head to as large as a half grain of wheat. Some of these were yellowish, some copper colored, and others were tinged with red. Staphylococci also were present in the pus. Specimens submitted to Brem-Zeiler-Hammack were reported as actinomycosis.

On January 13, sugar appeared in the urine and on January 18 there was 4.5 per cent sugar and 3.2 per cent albumen by bulk, both of which had decreased to heavy traces by January 23. The fever was of a remittent type, ranging to 102 degrees, and the pulse remained fairly constantly at 120.

Vomiting continued at intervals and she complained of almost constant nausea. As soon as the diagnosis was cleared up treatment with intravenous sodium iodid was started and the pancreatic area irrigated daily with one per cent copper sulphate solution and later a weak aqueous solution of iodin was used. Potassium iodid was tried but invariably produced vomiting, so had to be discontinued.

On February 23, treatment with colloidal copper (Cuprase) by intramuscular injection was started, one ampoule being given every fourth to fifth day. After the fifth injection the discharge began to diminish and the actinomycotic granules disappeared, the temperature began to decline and reached normal on March 8, 1928.

About this time the vomiting became more frequent, she lost rapidly in weight, her appearance became drawn, and she complained of a metallic taste. The sinus by this time had ceased to discharge and was about closed.

On March 28 she suddenly developed convulsions and died. Autopsy was not permitted.

COMMENT

The interesting points about this case are the antecedent symptoms, the high white count, the retroperitoneal mucous edema, remittent fever, glycosuria which cleared up, the persistent vomiting, the apparent response of the infection to colloidal copper, and the terminal convulsions.

I believe that should I have occasion to use colloidal copper again I would increase the interval of treatment, and upon the slightest evidence of copper saturation would stop its use until such symptoms had cleared up. I believe that colloidal copper is a rational and effective treatment for actinomycosis.

668 E Street.

# BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussion invited.

## WHAT IS A PREVENTORIUM CHILD

### *On Selection of Entrants*

CHESLEY BUSH, M.D. (Livermore).—So-called "preventoria" were established in the days when the origin and development of tuberculosis in childhood was not so well understood as it is at present. Consequently the standards for admission were somewhat hazy, and there has been a marked difference in theory and practice in various parts of the country. Statistics from various "preventoria" are not comparable. Some admit children sick with all forms of tuberculosis, including lung lesions, and retain children for long periods of time and are really sanatoria for children. Others exclude children with active pulmonary lesions and other types of active tuberculosis, admit children contacting to open cases of tuberculosis and admit all types of malnourished and under-par children irrespective of cause. Some exclude morons and mental defectives and children who are psychiatric problems; others are caring for them over long periods of time. The aim of other preventoria is to retain children no longer than two months; others retain them from six months to years.

In order to create some standards in this chaos, the National Tuberculosis Association appointed a committee in 1927 to study this problem and their report recommended the following standards of eligibility:

1. Children exposed to open tuberculosis in the home or in whose immediate family there has been a recent death from tuberculosis.

2. Children who have had tuberculosis, whose lesions are not active and who appear to be in need of further care and observation.

3. Children suffering from malnutrition.

4. Children who tire easily and are not able to carry on their class work.

5. Children frequently absent from school because of colds, bronchitis, etc.

6. Children suffering from rheumatic heart disease in Class 1, *e* and *f* of the classification of the American Heart Association.

This year, because of increasing knowledge and experience with tuberculosis in children, the National Association has appointed another committee to restudy this problem and recommend new standards both of eligibility and care.

It has been found that the diagnosis of existing tuberculosis in childhood is not the simple procedure of judging underweight children and those with chronic respiratory infections, but is a matter of more accurate diagnosis by means of the tuberculin test and x-ray films. It has been found that children with mild lesions of the parenchyma of the lung may be giving off tubercle bacilli despite apparent good health. Further, that many children with tuberculous infection dormant in the tracheobronchial lymph nodes do well when put on a modified school program where they receive extra rest and extra nutrition without being sent away from their homes, provided their source of infection is eliminated. All these findings indicate that a preventorium must be intimately associated with facilities of doing intensive examination work among school children and with the families of known tuberculous patients as well as with a sanatorium for the care and isolation of those children with parenchymal lung lesions. There is no useful purpose of treating malnutrition which is due to social and economic reasons in the home, and hence there must be intensive social work amidst this group. However, there appears to be no reason why preventoria should be confined exclusively to tuberculous children as long as the dangerous types are excluded. The usual routine is beneficial to other types of under-par conditions.

I would suggest that present standards of eligibility be as follows:

1. Children reacting positively to the tuberculin test, without evidence of parenchymal lung lesion, who remain substandard in health after modified school or home routine fails.

2. Children discharged from sanatoria or medical care elsewhere whose tuberculous lesions have disappeared or have become fibrotic and calcified with all evidence of healing.

3. Malnutrition from other than social or economic cause.

4. Children for brief periods of health education.

5. Children suffering from rheumatic heart disease in Classes 1, *e* and *f* of the American Heart Association (provided facilities for immediate hospitalization are available in case of need).

6. Children subnormal mentally should be excluded.

* * *

### *On Behavior Problems*

J. LLOYD EATON, M.D. (Latham Square Building, Oakland).—Preventoria are concerned primarily with the physical aspects of health. Therefore in selecting children for a preventorium, behavior difficulties should be considered only as incidental to physical status; "problem children" should only be accepted when their emotional maladjustment accompanies poor physical condition. In fact, it is inadvisable to accept the more serious type of behavior problem, even

though the child in question presents a "typical picture" from the medical point of view. There is no question but that emotional instability has a profound effect on the health of the child, as well as on his happiness and ability to make satisfactory adjustments later on in life. Neither is there any doubt but that the time for the treatment of such problems, in order to bring about permanent results, is in early childhood. The preventorium undoubtedly meets several of the major requirements for the treatment of such problems. However, the preventorium—generally handling a large group with a minimal staff— is designed for children who will fall into a set routine with little individual supervision; it can not cope with children who do not fit into the prescribed program, who are apt to upset the routine of the other children, and who call for workers trained in handling psychological problems. Therefore the type of child who is so seriously maladjusted as to be a definite disturbing influence in "camp life" should be excluded.

However, we could not, even if we would, exclude all behavior problems from the preventorium. In fact, such children will be found in much larger numbers among "preventorium type" children than in the general population. Naturally, such children are not admitted to the preventorium with the diagnosis of "behavior problem," but it is impossible to overlook the great incidence of such cases among the children selected for preventoria care by the usual criteria. We have not far to look for the reason for this striking "coincidence." The major causes of children being "under par" are probably threefold: first, illness on part of child; second, unsatisfactory home conditions (perhaps temporary) such as illness in family, financial strain, friction, etc.; third, parents who are incapable of, unwilling to, or don't know how to, care for children properly. Obviously such conditions are sufficient to, and frequently do, breed emotional maladjustment as well as malnourishment, etc.

But of even graver significance than this coexistence of physical and behavior problems, both arising from the same sources, is the fact that frequently malnourishment and related conditions are directly *due* to nothing more nor less than behavior problems. For example, poor sleeping and eating habits are surprisingly common in spite of the fact that most parents recognize the importance of adequate rest and a good balanced diet in sufficient quantity. What they fail to recognize is that all children will sleep well, and will eat readily whatever is given them (except, of course, in the relatively rare cases of allergic protein sensitization) if they have been properly handled. Yet many children are reported as, *e. g.;* "not being able to eat cereals," "refusing to drink milk," or "not liking vegetables." Often the parents even offer explanations: "I never could eat eggs"; "Johnny's father doesn't like milk either." In such cases the unsound psychological procedure at the root of the matter is obvious—it is parental suggestion. Such poor eating habits cause malnourishment, making the child susceptible to all the various infectious diseases. Naturally, as the physical resistance of the child is lessened it becomes irritable and "nervous," its appetite is apt to be poor, its bad habits are aggravated, and physically it is depleted even more. This vicious cycle, having started on some such simple habit basis as one of the examples given above, can go to serious lengths. Obviously, building up such a child's health at a preventorium will do little lasting good if the child is allowed to go home and resume its old habits.

A large number of these minor behavior problems clear up automatically under the preventorium routine; some, in fact, so speedily that, although the children were "problem children" while at home, they are not even recognized as such at "camp." There will be more mention of this group later.

There are several reasons why this type of institution is so ideal for the treatment of these cases, and why it yields such markedly good results:

1. The child is removed to an entirely new environment, and the disturbing elements and familial associations existing in the home are no longer present.

2. The preventorium offers a calm, unexciting atmosphere, free from the petty irritations and excitements which probably prevail at home.

3. The institution provides a regular routine which is strictly adhered to, and while this is important for a child's proper physical development it is even more helpful in establishing emotional stability since there can be no argument or haggling when the program provided is a thoroughly consistent one.

4. Finally, it is difficult *not* to conform in the face of the example of a large group of children who *do* conform. Some children respond readily to authority and the good influence of their "peers"—and others delight in defying such authority. But it is a rare child, or adult for that matter, who can bear to lose caste with his *own* group. Therefore the value of placing a child with a group of children who take pride in "playing the game" according to the rules and who watch with eager interest for the desired results cannot be overestimated.

The child, then, returns to its home in much better physical condition, which automatically alters its whole outlook on life and renders it emotionally more stable. The child has been enabled to get a new start under new, ideal conditions, and it is easier to carry over into the old situation than to get off to a new start under the old, familial conditions. In the meantime, while the child has been away from home, an ideal opportunity has been offered to make over the home to better suit its needs and to prepare it for the return of the child—this, of course, provided the facilities are available for such rehabilitation of the home. If the home is "unrehabilitable" the child should not have been accepted in the first place.

A later paper in this series will deal with the problem of after-care in detail, but I merely want to stress here the importance of after-care in cases of behavior difficulties, and the importance of behavior difficulties in after-care. In many cases

the prescribed program is not being carried out at home, in spite of good intentions, because the mother does not know how to enforce such a program—the child has fallen back into its old, undesirable habits. Here the parents need instruction as to how to deal adequately with the situation.

Special mention should be made here of the child, referred to above, who adapts himself so readily to a new regime that behavior difficulties which existed at home are not in evidence at all at the preventorium. Failure to recognize the fact that such behavior problems did exist will lead to the (false) assumption that this child may be expected to return home and exhibit only the desirable traits evidenced at "camp." Chances are, of course, that he will not. An adequate system for checking on the emotional maladjustments which are so detrimental to health, and providing satisfactory after-care, would include a thorough investigation of children's behavior symptoms *before* entrance into the institution.

In private practice the physician often meets with this type of child who is under par but who shows no pathologic changes. Many physicians dismiss these patients with a few general instructions and some such comment as: "Naturally Mary is thin—her mother was thin, too, as a girl," or "You can't expect Walter to ever be really robust—he's the same 'thin type' as his father." How unfortunate that those parents who are interested enough in their children's welfare to take them to the doctor should be turned away in this manner when there is so much that could be done. For these under-par children can be "built up" if the physician will only: (1) Recognize them as medical, and often psychological, problems. (2) Make a study of the child, the parent, and the home. (3) Devise a health regime and outline it in detail, preferably in writing, to the parents (a visit of inspection to a preventorium on the part of the parents is often helpful). (4) Keep the child under observation.

This will, of course, involve close and frequent contact over a considerable period of time. Generally, however, in view of the striking results obtained and the enthusiasm of the parents, it will prove well worthwhile in the long run.

*Conclusions.*—The preventorium should not accept children who are seriously maladjusted emotionally. However, behavior problems are bound to loom large among preventorium-type children, often as contributing causes to, and not infrequently as the sole cause of, poor physical condition. Such children respond readily to preventorium care, yet the "follow up" is of major importance in such cases. The recognition and treatment of these problems in general medical practice is a much neglected field, but is one which offers gratifying results.

* * *

### *On After-Care of the Preventorium Child*

CHARLES P. DURNEY, M. D. (Alum Rock Sanitarium, San Jose).—Unfortunately, a child admitted to a preventorium is to a certain extent immediately endowed by acquaintances and friends with the stigmata of disease and this disease, by reason of the origin of this very valuable institution, is tuberculosis. The idea resulting in the establishment of preventoria was conceived in the minds of those particularly interested in tuberculosis. Its name denoted a refuge, the ideal of which was to prevent the development of tuberculosis. It was quite natural, and in order that children who, by reason of known contact, and those actually presenting indications of infection but without indications of active tuberculosis, should be selected as the principal eligibles.

With the growth of such institutions and their established popularity, there has come a distinct modification of the original concept, and now we find listed as eligibles children in the six to twelve age period who are described not as "pretuberculous" or "tuberculosis suspects," but falling in that group much wider in its limitations and termed the "underprivileged." Moreover, the preventorium, as it is established and operating today, is frequently asked to admit and train the "problem child." I mention these points in order to show that the definition of a preventorium must of necessity be modified considerably and that when the question of after-care is considered we must first understand the reason for any particular child's sojourn in that worthy institution. If we consider the child because of his poor physical status, his contact with open tuberculosis, his doubtful or suggestive superficial or deep adenopathy, his positive skin reactions to tuberculin or, in brief, the very strong likelihood of his being a pretuberculous youngster, then after his discharge, assuming that he is benefited, as do the vast majority of these little fellows, the problem of his after-care, it seems to me, must be to a considerable degree quite different from that of his fellow inmate who came from a fairly normal home environment with no known contact with tuberculosis or any other disease, but was referred to and admitted by the preventorium because of his parent's or guardian's inability to cope with his irregular or even vicious habits, his disinclination to take proper food, perhaps the presence of a bad mental standard—in other words, a "problem child," or "underprivileged child," or a combination of both. It is admitted that we can have in combination a pretuberculous and a "problem child," but it is frequently found in preventoria today that individuals falling under these separate classes are admitted and brought back in a remarkable manner to that condition which we speak of as normal or average. In the after-care, when everything is considered, we can be quite safe and quite brief in setting down a blanket order in which we may simply direct that the child carry on the same regime which brought about the ofttimes remarkable improvement while in the institution.

This rule is easy to formulate. It is quite a different thing to have it followed, for, while the child has learned to accept a new psychology generally and has been taught and helped to practice the rules of simple, regular living which have

brought him back to normal health and happiness, it would be foolish indeed to suppose that those sharing his former environment have also developed and put into practice a new mode of living; or that they, even though intelligent and interested in the child's welfare as they may be, will see the necessity for instituting changes at all as the child is now apparently quite well. It is building on uncertainties to ask the family physician to carry on. He was unable to do it in the first place, and now that the child returns apparently well it is quite unlikely that he will even contact the family physician.

Some institutions present to the parents or guardians a special form upon which is printed certain instructions. In the case of the child who has been an inmate because of pretuberculous indications, the most important line of instructions on this form is that which directs the prompt return of the youngster for frequent reexaminations. Experience has taught us that we should be ever watchful; and certainly so when this preventorium graduate is passing through those age periods in his growth toward maturity or young adult life, in which activity of a latent or dormant infection into actual disease so frequently occurs. Therefore, if we have any responsibility whatever for this interesting specimen of humanity we should make this "follow-up" mean something and not allow it to become a perfunctory clinical habit.

A most effective plan has been formulated and worked out to a very practical and functioning unit of our school system and it solves to a remarkable degree the problem which presents itself in the after-care of a preventorium child, and this is the so-called "Sunshine School." Here, for at least nine months in the year, the preventorium graduate can continue along very much as he did in the institution. It is interesting to note at this point that the Sunshine School is supplanting to a large extent the preventorium. And, too, I have been very much interested in having workers in the Sunshine School plan express regret that these schools cease to operate during the months of public-school vacation. They say that during this vacation period many of their charges lose ground.

What is it in the preventorium or the Sunshine School that brings about the ofttimes startling improvement? I believe that the reply to this question lies in the simple and regular routine of life to which the child finds it necessary to conform and learns to appreciate.

To summarize: First, the after-care of a preventorium child is based upon a definite understanding of the particular reasons for that child's admission into and care in the preventorium. Second, every child in a preventorium is not there because he is pretuberculous. He may be a "problem child" or an "underprivileged child." Third, tragic experience has conferred upon us knowledge of the insidiousness of tuberculosis and its potentialities for evil. Therefore, we should stress the well known "follow-up" and make this a careful and frequent procedure and over a prolonged period in those institution graduates in the pretuberculous classification.

It is reasouable to assume that children who are discharged from preventoria in the regular manner leave with a clean bill of health, and certainly all those who have had the pleasure and privilege of observing these youngsters on their discharge can subscribe to this assumption. Then we can further assume that their after-care need but follow the usual and commonly accepted rules of life which govern the care and conduct of any other normal, healthy children.

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*On Importance of Social and Behavior Problems*

HAROLD GUYON TRIMBLE, M. D. (508 Sixteenth Street, Oakland).—In reviewing the previous papers on three most important phases of the preventorium child, each is dominated by the same major theme—the fact that the preventorium phase of the child's care is but a small though essential part of his individual problem.

It is of interest to follow the historical development of this idea. It is but a short ten years ago that the summer camp of six weeks' duration for children who were contact cases and selected on a basis of height and weight tables was our ideal. How impressive it was to report the number of pounds gain of each child on their return home. It took but two or three years to show that this gain and general improvement was rarely held more than a few weeks. The child was back then where it had started. The twenty-four hour all year round preventorium was the next step, growing directly out of the summer camp idea—using often the same site and equipment. Admitting these children on the basis of more careful medical study including x-rays and tuberculin tests and keeping them from six to twelve or more months, gave but 50 per cent permanent improvement—a poor showing. In studying a group of such failures there was found to be a serious fundamental social defect in the home in 80 per cent. In other words, we were attempting an impossible thing. We failed to recognize that, in the long run, permanent results were a matter of solving the social and behavior problems for each individual (or providing a satisfactory substitute) as well as caring for the purely physical problem. There are some factors for which society has as yet found no real remedy, such as poverty, fundamental lack of understanding, broken-up homes. The home being inadequate we have turned to the school, with the happy result that in this fashion we can expect 75 per cent reasonably permanent progress over a period of years.

Such are the follow-up figures on the first two hundred "graduates" from the Contra Costa County preventorium, and I believe they are representative. No new machinery need be created for these purposes, but existing facilities and personnel can be readily adapted and coördinated. Of tremendous help in pulling together these agencies is a sympathetic, understanding, tactful, well trained medical social worker.

We have come to visualize and to put into practice the set-up for the care of this type of child in the following fashion.

SANATORIUM

PREVENTORIUM

SCHOOL SUNSHINE CLASS

PHYSICIAN + VISITING NURSE

THE HOME

One can start any place in this scheme and work in either direction, but the essential fact remains that unless these units are coördinated the individual child suffers. In the final analysis, the problem must be worked out in the home—or failing this, in the school. The most the preventorium can do is to act as an educational center and help to work out some of the more difficult technical problems.

Finally, in the absence of poverty, a completely disorganized home or total lack of family cooperation, there are very few of these children who could not be successfully handled by an understanding physician and a coöperative parent in their own home surroundings. And in the presence of these factors, unless they be solved or substituted for, the final permanent result is likely to be failure no matter how careful the preventorium supervision or how long the length of stay.

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*Mr. Stanley Baldwin's Remarks on Thanksgiving Day.* Addressing the American Society of London on Thanksgiving Day, Mr. Stanley Baldwin, Prime Minister of Great Britain, said:

"It is a particularly delightful act of friendship on your part to ask an Englishman to be present tonight at your most domestic family gathering and to allow him to return thanks for the toast of the evening. It is true, as your chairman has said, that I declined his invitation. I declined it because since August I have had so many engagements, for one who dislikes speaking, that I decided to accept no more until after the general election, when possibly no one would require my services. What really decided me, and I make the confession openly to you, was the recent trouble into which my old friend has been getting. At my first attempt to get into the House of Commons I was defeated, and I know what it feels like. You may smile at the world, but you do not like it, and I thought it might be some help to him if a fellow victim held his hand tonight.

"The Ambassador said quite truly that you have much to be thankful for. He spoke of the Pilgrim Fathers. I like to think of that little colony that went out before them and spent the winter at the mouth of the Kennebec River in the early years of James I, and they came back home and said: 'This climate is one in which no Englishman can ever live.' It shows the tenacity of the race that after them the Pilgrim Fathers went and did live.

"It is a wonderful thing that about that time Hudson went sailing up the river to which he lent his name, and got as far as Albany in the sure and certain hope that he would emerge on the shores of the Pacific and find the route to India. It was a curious fact to remember, too, that just about the same time as the Pilgrim Fathers went out, King James—who I may instinctively remark, for the benefit of those who have forgotten, was a Scot and not an Englishman—thought there was gold in Virginia, and sent a colony out to find gold; and to his indignation they only found tobacco.

"But when you look at those beginnings, it is marvelous, following on through the next two centuries, to see the fortune that attended those men, their children, and those who came out to join them. They were nearly all British stock, and their ancestors, in common with other people in Europe, had had to fight for every yard of land they ultimately lived on in whatever country of Europe their far-away ancestors had first settled. On the American Continent the descendants of those men had a clean start. The same spirit that had driven them out from England drove successively the most eager stock of each generation, till, in time, they had bridged the rivers, they had forced their way through the forests, they had struggled over the plains, and they had crossed the mountains till they did what Hudson had dreamed of, and they looked down on the Pacific.

"They had no real rivals—the French, occupied in wars in Europe, paid but little attention to the Louisiana settlement, which fell easily into the hands of the Americans. There was no great Power holding the Western gateway. There was nothing to stop them, and they found themselves, by the grace of God, in possession of a continent, rich in many parts for agriculture, full of easy means of communication by great rivers, and beyond all that were three thousand miles of ocean on either side that protected the nation in its childhood and in its youth.

"It protected them from more than hostile arms. It protected them from immigration at a time when for the nation it was all-important that they should take possession of the whole land and stamp upon it the characteristics of the people from whom they sprang. And that was done before immigration began to roll in; and mark this, as emigrants rolled in and as the Pacific Coast became settled, the engineer came into his own, and the railroad was thrown across the continent. By that means alone you prevented the possibility of a separate American nation growing up beyond the Rocky Mountains, just as the completion of the Canadian Pacific Railway kept British Columbia indissolubly linked with Canada instead of being a Pacific nation.

"You may well have your Thanksgiving Day, and I rejoice with you here today. But, of course, there are some things in which I feel my own peculiar thanksgiving, and let me remind you of this—had there been no America there would have been no tobacco. I have read some very fine and true words—the author of which shall remain anonymous—but who said that the true history of tobacco would be the history of liberty in England and America. It was tobacco that planted the English nation in America. It was the London Company that sent the settlers out, that recognized their government in Virginia, the freest government of that time on that coast. Virginia was founded on tobacco, and Virginia produced a George Washington to write on tobacco, and I may add that Virginia—Heaven bless it!—is the only country in the world which has had tobacco as its currency. There was a time when you could buy a coffin in Virginia for 100 pounds of tobacco. In 1619, before your Pilgrim Fathers, the London Company sent out a shipload of marriageable women to Virginia, and so deeply was liberty implanted in the minds of the English at that time that those women had perfectly free choice as to whom they should marry. The bridegrooms, however, had to pay 100 pounds of tobacco for the transport of the women to that country."

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*Orphanage Becomes Old People's Home.*—The Jewish Children's Society of Baltimore is now taking care of its dependent, neglected, and problem children in foster homes, and its children's home at Levindale has been turned into a home for old people. This progressive agency, says the Child Welfare League of America Bulletin, invites its foster parents to meet the staff at tea and informally discuss topics of common interest. It has recently tried the experiment of having the foster mothers buy the clothing for the children in their care, a plan which during the first year resulted in a total saving of approximately $1000.—*United States Children's Bureau, Washington, D. C.*

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# EDITORIALS*

## IMPORTANCE OF PERSONNEL IN METROPOLITAN HEALTH BOARDS AND OFFICERS

*How San Francisco Recently Selected Its Health Officer.*—In the August CALIFORNIA AND WESTERN MEDICINE (pages 319 and 328) comment was made on the manner in which the city of San Francisco had seen fit to go about the task of selecting a successor to its former well-known health officer, the late William C. Hassler. In the letter which was sent to CALIFORNIA AND WESTERN MEDICINE by the secretary of the Western Branch of the Public Health Association it was stated that Mayor Angelo Rossi

"almost immediately following Doctor Hassler's death, instructed the Board of Health by memorandum that political affiliations and party lines should be laid aside in seeking a successor to Doctor Hassler. . . .

"He suggested the appointment of an advisory committee, consisting of the deans of the University of California and Stanford Medical Schools, the president of the San Francisco County Medical Society, the chairman of the San Francisco Health Council, and others, to consult with the board in the selection of the best candidate. The above advisory committee, after careful study of the functions of a municipal health department and the qualifications presented by some ten candidates, unanimously recommended Doctor Geiger."

In commenting on the appointment of Dr. Jacob C. Geiger of the Hooper Foundation of Medical Research, the San Francisco *Chronicle* printed the following:

"In the selection of Doctor Geiger neither politics nor influence played any part. Guarding the health of our population is too serious a problem to admit of any criterion in the selection of a health officer other than outstanding and recognized ability in this highly specialized department of medical science."

* * *

*The San Francisco Policy Was in Harmony With Modern Public Health Viewpoints.*—Mention is again made of the above because the course pursued and the action taken in these matters, in striving to keep the San Francisco public health work and its health commissioner out of the domain of ordinary civil politics, is a policy which probably has the almost unanimous endorsement of members of the medical profession and also of all lay citizens who understand the significance and importance of public health work.

San Francisco, in proceeding as it did, acted wisely and in accordance with modern day concepts of public health standards; and for this action received the commendation of public health authorities from all parts of the United States. The example set was worthy of emulation, and one would naturally have expected that the action taken would have been taken to heart, in California at least.

* * *

*A More Recent Vacancy in the Position of Health Officer of Los Angeles.*—The opportunity to profit by the San Francisco example soon and unexpectedly presented itself in another California city, for before the month of October came to a close a vacancy occurred in the position of health officer of California's southern metropolis, Los Angeles.

The events leading up to that vacancy will not be here discussed, because there is no wish to become involved in an exposition of the respective personal merits of the former and present health officers of the city of Los Angeles. We are here concerned with basic and important principles having to do with the organization of state and local public health departments and their relation to the medical profession. Our comments are presented with such intent.

The Los Angeles city board of health, for several years past composed entirely of laymen, saw fit, through the action of a majority of its members at its meeting on October 27, to dismiss the then health officer, and to immediately appoint his successor.

Such procedure was certainly in strong contrast to the course which had been followed in San Francisco, as above outlined.

* * *

*Comments of a Lay Newspaper on the Method of Appointment.*—Some editorial comments in the Los Angeles *Evening Express* would seem worthy of place here, because they represent a viewpoint to which the medical profession probably gives assent. Quotation follows:

". . . When the opportunity was afforded, by discharge of Health Officer George Parrish, to secure

* Editorials on subjects of scientific and clinical interest, contributed by members of the California Medical Association, are printed in the Medicine Today column which follows.

for the city a nonpolitical, trained, experienced, competent man to head the vitally important Department of Public Health, the board of health instead made another political appointment.

"In the eyes of a majority of the health board members the health of the city's 1,300,000 inhabitants is second to politics. . . .

The Los Angeles County Medical Association, membership in which attests loyalty to the high principles of the medical profession, has suggested repeatedly to the health board the advantages and advisability of consulting with the United States Health Service or the Carnegie Institution, or both, before making the selection of a city health officer. These leaders in the profession have no favorite to promote. Their single interest is the public health, to place its safeguarding in competent hands. They would save this department from the bitterness of political contention which has prevailed almost uninterruptedly since the death seven years ago of the venerable Dr. L. M. Powers, whose administration of the health department for a quarter of a century gained him world-wide fame. . . ."

* * *

*A Letter From Dr. Granville MacGowan, Ex-President of the California Medical Association.*—In the correspondence column of this number of CALIFORNIA AND WESTERN MEDICINE is printed a letter from Dr. Granville MacGowan, a former president of the California Medical Association. In that letter attention is called to other phases of the new problems which have arisen in Los Angeles. Several other letters bearing on these issues are printed in the correspondence column, including one from Surgeon General Cumming of the U. S. Public Health Service. (See page 474.)

In his letter, Dr. MacGowan very properly calls attention to the undesirability of having as the executive health board of a metropolitan city a board composed entirely of laymen.

It probably would not be unfair inference to assume that a lay health board as now existent would consist of members appointed more because of previous activities in civil politics than because of special prior interest or training in public health work.

When the present set-up of a lay board came into being several years ago, the present editor of CALIFORNIA AND WESTERN MEDICINE called attention in these columns to the fact that such a mode of organization was not in accord with modern public health organization methods, and that it would be a matter of surprise if the plan did not lead to undesirable results. (See CALIFORNIA AND WESTERN MEDICINE of August, 1927, page 225.)

The prophecy there made has been abundantly fulfilled, as shown by the manner in which such a lay board went about the dismissal of one health officer and the immediate selection of a successor.

* * *

*What Can an "Advisory" Medical Board Do?*—It is true that the newly appointed health officer has nominated and secured the appointment by the lay board of a medical advisory committee of twelve well-known colleagues in Los Angeles, but does that really help matters to any extent? Such an advisory board, not having the executive authority—all of which is vested in the lay health board—can at best be little more than a figurehead advisory body, with the possible additional disadvantage of "holding the sack," should serious mistakes be made by the lay executive body. A similar advisory board of twelve members, as noted in the editorial above referred to, was brought into existence in 1927 and functioned probably little or not at all.

* * *

*A Rational Set-Up for a Health Board.*—It would seem to the editor that the city of Los Angeles owes it to itself and to its citizens that its health board should be composed of citizens who, through past training and knowledge of health and sanitation matters, would be in position to act with somewhat expert judgment, as based in turn on previous knowledge of public health work.

Such a health board might well have in its membership, say, two physicians, one veterinary surgeon, one sanitary engineer, and one business man. With such a grouping, the health officer could turn to a health board containing members who had special knowledge of epidemic diseases, of food production and distribution, of sanitary problems, and of business economics, these being the special factors worthy of coördination if best results are to be secured. It could be taken for granted that a health board of such complexion would be one which would commend itself generally to citizens, provided the mayor appointed representative and outstanding men to the different positions, which he would probably do if professional, civic, and commercial bodies did their part in informing him of the necessity of a high class personnel.

We believe it may also be taken for granted that with a board composed as above outlined, in case a vacancy had occurred in the position of health officer, that the action recently taken would have been far more apt to have been modeled after that of San Francisco, rather than that which the present lay health board of Los Angeles saw fit to adopt in its summary October meeting proceedings.

* * *

*The Medical Profession Cannot Avoid Its Responsibilities in These Public Health Matters.*—The terms of these lay members of the Los Angeles city board of health must expire one by one. Which naturally suggests the thought as to whether it would not be a worthy cause for the Los Angeles County Medical Association to espouse and begin and carry on a campaign of education in these important matters. Then, in due time, with representatives from civic and commercial bodies of the community, the Los Angeles County Medical Association could join with such organizations to acquaint the mayor and city council with the important principle that the health board should be made up of representative citizens somewhat as above outlined.

Has not the medical profession very special responsibilities in all this? Can it or has it a right to avoid those responsibilities?

## GOOD CONSTITUTIONS AND BY-LAWS NECESSARY FOR GOOD RESULTS IN COUNTY MEDICAL SOCIETY ACTIVITIES

*Individualistic Versus Group Action in Medicine.*—The practice of medicine tends to accentuate individualistic action and outlook. Because of this tendency, physicians must constantly battle with their human instincts of gregariousness and group action. It is fortunate that the heavy responsibilities of medical practice in the care of fellow humans make physicians instinctively seek the aid of their professional colleagues in meeting their graver from day to day problems. Nevertheless, most medical men are so engrossed in the daily responsibilities to individual patients that the majority pay little or no attention to influences which affect their profession as a whole.

In days gone by, before the period of modern newspaper intellectuality and its superficial thinking—if one can be permitted to use such an expression—the profession of medicine had little to fear from the machinations of unkindly or scheming lay fellows. For in that period the physicians were part and parcel of almost the family lives of patients, receiving a loyalty and devotion that was evidenced by the laity in respectful appreciation of the profession as such, and in willingness and glad coöperation in upholding its worthy disciples.

* * *

*Influence of Modern Day Newspaper Propaganda and of Cultist Medicine.*—As times changed came new forms of cultist medicine, and with increased force, because cultist medicine utilized modern day newspaper and other propaganda. The babel of discussion which followed brought to many lay citizens confusion in clear thinking on matters medical. This confused state of mind on the part of the lay public, of whom legislators were a part, made it possible to bring into being amendatory laws which sought to lower the standards of licensure in the healing art. When such efforts were successful, all the deleterious effects which are associated with such degradation of standards of training and practice became evident.

As time went on it was hoped by many physicians that such attacks would outwear themselves and grow less. On the contrary, they seem to have increased, as witness what takes place at every legislative session. The long lists of bills antagonistic to high standard medical practice which were introduced in this year's California legislature and as printed in CALIFORNIA AND WESTERN MEDICINE fully attest to that deplorable fact.

* * *

*Organized Medicine Is Confronted Not With Theories But With Facts.*—In our time, in these matters, the medical profession is therefore confronted not with idealistic theories on how the profession should be treated by law makers, publicists, and lay citizens, but with the unpleasant facts of what usually takes place. How can such a situation be bettered or its tendencies guided?

Must we not agree, when calamities assail communities, that united and mass action (that is, organized effort) are nearly always brought into being in order to grapple with the situations?

Such united effort is most efficient when properly organized, because wastage is then reduced to a minimum, and results are better than can mature through haphazard, spasmodic, or overlapping methods.

* * *

*Organized Medicine in America.*—Which leads to the inference that the medical profession, if it is to maintain its standards and do its work in most efficient and satisfactory fashion, must be an organized profession; each member of the organization doing his part in proportion to his means and talents. In America, the method of organization in medicine comprehends national, state, and county units. In California, the state organization, under its new constitution and by-laws, is working in efficient manner. In some of the county medical societies, however, there is evidence of lack of interest and of noncoördinated effort and wastage. This should not be. Members of the profession who desire to serve in organized medicine, and who find that their work ultimately leads to nothing, soon lose interest. Thus, through lack of proper interest on the part of its members, a county society may be deprived of its power to do the work needed in its community.

* * *

*Good Constitutions and By-Laws Aid Greatly.*—Which again suggests the thought that every county society should have a constitution and by-laws as good as possible, since those instruments are the technical means by which efficient service can be best carried on, year in and year out.

Therefore, would it not be wise at this time of the year for every county society to appoint a special committee to bring in at the annual meeting a report on its constitution and by-laws; with suggestions on any changes whereby the capacity of the society for increased service might be increased? In such a survey, a study of the California Medical Association constitution and by-laws should have real suggestive value. Copies of the State Association rules may be obtained upon request to the Association Secretary.

To repeat, the way to organize is to organize. Good constitutions and by-laws aid greatly in making it easy for the new officers of each year to take up their work promptly and efficiently. Good rules of organization therefore make it possible for county medical societies to measure up to the highest and best standards.

If the medical profession of America could be organized as it should be—with an interested, militant membership, alive to all public health and professional interests—much of the specious and unwarranted criticism which is now being heaped upon the profession would not even come into being. It is not too late to effect such high type of organization and service. Good constitutions and by-laws for the county medical units will aid to that end.

## IS A NEW FIELD ABOUT TO BE OPENED IN THE SCIENCE OF BACTERIOLOGY?

In this issue of CALIFORNIA AND WESTERN MEDICINE is printed an article having as its co-authors Arthur Isaac Kendall, Ph. D., of the department of research in bacteriology in Northwestern University Medical School, and Royal Raymond Rife, Ph. D., of San Diego, California. The caption of the article is "Observations on Bacillus Typhosus in Its Filterable State." The article is commended to the readers of CALIFORNIA AND WESTERN MEDICINE because it is a preliminary communication calling the attention of the world to a new type of microscope, which, if it fulfills its apparent advantages over any microscopes thus far developed, bids fair to lay the basis for revolutionary discoveries in bacteriology and the allied sciences. Whereas our present microscopes magnify from one to two thousand diameters, in this new microscope we have an instrument for which a magnification as high as seventeen thousand diameters is claimed. This is certainly a long stride from the initial efforts of Van Leeuwenhoek, whose simple instrument may be said to have laid the foundation for the science of bacteriology which later came into being; and by means of which science much of the world's progress, through man's conquest of the infective and other diseases, has been made possible.

It is a source of gratification to know that the development of this new instrument which offers so much for medical research in the future took place in good part in California. The paper presented in this issue by Doctors Kendall and Rife was presented at a meeting of Los Angeles and Pasadena colleagues held at the home of Dr. Milbank Johnson of Pasadena, who induced Doctor Kendall of Northwestern to come West to make some special investigations and tests. The meeting was held on November 20, just as this December number of CALIFORNIA AND WESTERN MEDICINE was going to press. The matter seemed so important to the editor that special efforts were made to have the paper appear in this December number. It is hoped to have other communications in future issues.

## IMPORTANT CALIFORNIA SUPREME COURT DECISION IN RE: EXPERT MEDICAL TESTIMONY

In the Medico-Legal column of the Miscellany Department of this month's CALIFORNIA AND WESTERN MEDICINE is printed a report on a very important medico-legal problem. The particular legal action was carried to the Supreme Court because of the important principles involved. It was Joseph Catton, M. D., of San Francisco, who created the question at issue, through his refusal to testify on behalf of the defendant in a personal injury case. He had been called by the attorney of the plaintiff to make an examination of the plaintiff, and he contended that it would therefore be unethical for him to testify at the request of the defendants; and, further, that the defendants, not having made arrangements to financially compensate for testimony as an expert, he was therefore not obligated in law to give such testimony. (Report is printed in this issue of CALIFORNIA AND WESTERN MEDICINE, p. 472.)

The matters at issue were called to the attention of the Council of the California Medical Association, the Council then instructing the legal counsel, Mr. Hartley Peart, to enter into the case as a "friend of the court," in order that certain important professional interests of a legal nature could be called to the attention of the Supreme Court of California, to which court the case had been carried on appeal.

It is hoped that many of the readers of this journal will give themselves the pleasure and benefit of perusal of the report referred to.

It is gratifying to know that certain principles important to the medical profession were established through this decision of the Supreme Court of California. The fact is that many persons are prone to demand almost everything from members of the medical profession, in strong contrast to the manner in which real and personal property are hedged with legal safeguards. Here again is exemplified the need of constant vigilance and willingness to meet important issues as they arise. The Council of the California Medical Association and Mr. Peart, as legal counsel of the State Association, for their prompt and efficient action have the appreciation of members of the California Medical Association.

## COMMENT ON THIS AND THAT

*Cyanide Fumigation—Two Deaths Therefrom in Los Angeles.*—When California's sister state—Nevada—in lieu of the gallows or the electric chair installed its lethal chamber in which cyanide gas was used as the means of exit from earth for those of its citizens who had been condemned to death, that present day departure from procedures elsewhere established, was greeted with much newspaper comment and discussion. Even yet each such lethal chamber execution receives more than ordinary space in the daily press.

The efficacy of the cyanide method in producing almost instantaneous death is not gainsaid; but to have two young men in Los Angeles die by practically the same method, in a hotel in which one room was presumably infested with vermin (bedbugs), because the official fumigating firm did not completely close a steam pipe aperture leading to the room above, would seem an altogether too heavy a price to pay for so-called more effective modern-day methods of vermin destruction. The city of Los Angeles, and its public health department in particular, have a heavy task in explaining to the bereaved relatives and friends of the two young men whose lives were unceremoniously snuffed out, why such a method of vermin destruction, dangerous even though efficient—unless combined with adequate and meticulous supervision—should have been used.

These two unnecessary deaths naturally caused a furor in the lay press, and rightly so. If the

two young men during life had occupied high social or civic stations, the press notices and criticisms would no doubt have been doubled or trebled, and it would have been demanded of the civic authorities that immediate action be taken to prevent a repetition of such an occurrence. To the mother and relatives and friends of these young men, who thus lost their lives on November 16, the tragedy, however, is just the same and just as heartbreaking as if they had been civic leaders in the community.

* * *

In this connection the question may be fairly put: "What expert knowledge and judgment will now be brought to bear on this case by the five lay citizens who, through appointment by the mayor of the city, constitute the health board of Los Angeles, and who in that capacity have the final say on public health activities in that city of more than one million persons?"

In the last analysis, must not the health board bear its goodly share of responsibility in what took place? For it is the health board which must not only supervise the administration of public health laws but which must take a leading part in bringing into being additions or changes in present health and sanitation laws, when such do not adequately protect human life.

In a function so important to the welfare and lives of citizens, should not such a health board be composed of citizens having that special knowledge and experience which could be of great value in the solution of public health problems?

* * *

*Rabies Aboard Ship.*—Several months ago, CALIFORNIA AND WESTERN MEDICINE gave considerable space to a discussion of the rabies situation in Southern California. (See CALIFORNIA AND WESTERN MEDICINE, July, 1931, page 39.)

Dispatches of the Associated Press of November 17 told the story of a group of sailors who had been bitten by a dog smuggled aboard the United States destroyer *John D. Edwards* on October 15, when the ship was at Chefoo, China.

Arthur Brisbane, in his column in the *Examiner*, made the following pertinent comment on the incident:

"A small dog, smuggled aboard a destroyer in harbor by sailors that desired a playmate, bit ten of the seamen. What happened will interest those that say talk of rabies is all nonsense; also those that think disease is not real.

"The ten bitten concealed the fact. Three died of rabies, the other seven are in the hospital, undergoing treatment."

What took place was certainly a tragedy to the unsuspecting victims who, through disobedience of an order against dogs, brought the supposedly healthy dog aboard ship. A lesson also, as Brisbane indicates, to lay citizens who, from theoretical premises sufficient unto themselves, contend that the disease known as rabies exists only in the minds of members of the medical profession.

*A Newspaper "Sob Story"—Medical Attention Difficult to Secure.*—About November 18, Los Angeles newspapers printed a pathetic story of a penniless father and family resident in the outskirts of Los Angeles whose infant child of twenty months became ill and died at the end of two or three days. The infant was one of six children; the father was out of work and without means. This setting, with the fact that one or more doctors supposedly had been telephoned to before answering the call, and that the physician who did attend the child left a prescription which had been filled by a druggist on the promise of the man to pay for the same at some future time were sufficient elements for special "sob stories" in the lay press. Photographs of the family and of the bottle of medicine made absorption of the feature writers' stories the more appealing. The stories were no doubt read with avidity by many citizens, and therefore could be interpreted as having good news value.

That what took place was unfortunate cannot be denied. But the impression as given in the newspaper accounts, of cold-hearted physicians, was hardly warranted. In consideration of an instance such as this, society at large, and particularly lay citizens of means, may well ask themselves, if at the end of each year, they think they can give as commendable records of themselves as can the multitude of physicians, who in their offices and hospitals are constantly giving gratuitous service to their fellow men who come for free medical service when buffeted by the complex of disease or injury, with poverty.

That the happenings in the family group above cited are worthy of investigation and thought there can be no question. That the solution of such a problem should be found in better organized charity, maintained by the joint efforts of all citizens rather than through the gratuitous service of members of one profession would also seem to be a fair inference. That the lay press would probably be able to do a great service to the public by enlisting the aid of constituted public and private charities in this instance to ameliorate the poverty complex of which the infant's illness was only a part, would also seem reasonable.

This particular newspaper story is here discussed because it must seem difficult for many physicians to understand hasty criticisms of their profession, when year after year they have seen themselves and their fellow physicians give without stint, the most generous and efficient type of professional service to the poor.

It is hard to properly evaluate criticism that is based on an exceptional case of presumable tardiness in charitable action by a physician or physicians; and to explain why so much more publicity and display for such an instance should be given in the lay press than comes in the shape of kind words or other recognition throughout an entire year, to the hundreds of physicians and surgeons who are constantly giving of themselves and their professional services in most altruistic fashion to the lay public. Consistency in thought and judgment, at times certainly seems to be a somewhat rare attribute of many human beings.

# MEDICINE TODAY

This department of California and Western Medicine presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to every member of the California, Nevada and Utah Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

**Muscular Pain and Its Treatment.**—Pain as a symptom cannot but interest all physicians. One of the most frequent painful conditions is the so-called "muscular rheumatism ("fibrositis") whose etiology is obscure, its differential diagnosis often difficult, and its course long, distressing and incapacitating.

Hence, any possible addition to our diagnostic and therapeutic resources in this disease merits serious consideration.

Max Lange, of the Munich Orthopedic Clinic, in a recent publication* presents clinical and experimental evidence to show that much of the pain in muscular rheumatism, sciatica, and lumbago, as well as in sprains and joint injuries, is due to the formation in the muscles of palpable swellings which are intensely sensitive and are usually accompanied by muscular spasm, which is protective in function.

These swellings, though not of the consistence of dense fibrous tissue, can be mapped out by their sense of resistance. They are to be distinguished from the nodules following definite myositis or fibrositis with which we have been long familiar, since in the former, histological examination shows no abnormalities while in the latter there are definite inflammatory changes.

Schade and Fritz Lange consider that they are due to changes in the colloid material of the muscle, which undergoes a "gelatinization" probably allied to what occurs in rigor mortis. This change seems to be favored by exposure to cold, by overuse and strains, as also by intoxications and infections, and by disturbances in metabolism and internal secretion, though what these latter are is unknown; and as to the ultimate cause of rheumatism we are quite at sea. For the swellings described, these authors propose the name of "muscle hardenings" or "myogeloses." These hardenings do not disappear under anesthesia and, therefore, are not spasms of muscle fibers, but their absorption can be procured through deep massage in which sometimes considerable force may be necessary. If the areas are large their dissipation produces in the overlying skin, discolorations like those of a subcutaneous hemorrhage undergoing absorption, which indicate that the manipulation has been successful. These areas vary in size from that of a lentil to cylindrical swellings as thick as one's little finger and tend to occur particularly along the edges of the muscles, especially in those of the shoulder and pelvic girdles and in the back and limb muscles. For their detection by palpation, considerable skill and experience are necessary, but not more than can be acquired by any physician.

Lange gives diagrams showing the most prominent seats of the "myogeloses" and describes his methods of palpation and of massage or "gelotripsy," which consists of deep kneading movements and stroking toward the fleshy portion of the muscle, where the disintegrated products are most readily absorbed. In fresh cases of muscular rheumatism this may lead to speedy relief of pain, but even those of years' standing can be aided, though the manipulation will take considerable time. However, in every case an effort must be made to discover and remove the underlying cause of the disease, otherwise the myogeloses will recur. How difficult is this latter task we know only too well.

Lange has been working chiefly from the standpoint of the orthopedist and finds the methods described an immense improvement in the treatment of the various professional spasms, strains, injuries of muscles, arthritides, and in the after-treatment of fractures where pain and stiffness are the chief obstacles to the return of function. In all these instances he finds myogeloses present and susceptible to removal, with the happiest results. While he relies in practice upon his "gelotripsy," he presents some experimental results to show that the injection into the affected muscles of small doses (one-half to two cubic centimeters) of a one-half to one per cent solution of sodium phosphate may aid in the absorption of the myogeloses.

Location of the myogeloses and their differentiation from tumors, varicose veins, etc., must precede all manipulation. Sciatic and other neuritis must be eliminated, as "gelotripsy" can only harm these. Lange is very explicit as to diagnosis preceding treatment and describes at length how to make it.

CHARLES LEWIS ALLEN, Los Angeles.

*Lange, Max: Die Muskelhärten (Myogelosen), (Lehmann, München, 1931).

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**A New Meningococcus.**—That nearly ten per cent of the meningitis cases in America are due to a micro-organism "not represented in any of the therapeutic polyvalent serums now manufactured" is indicated by a recent contribution from the Hygienic Laboratory of the United States Public Health Service, Washington, D. C.† This new micro-organism (*Neisseria flavescens*) is morphologically indistinguishable from previously known meningococci, but is readily differentiated by its cultural characteristics, particularly

† Branham, S. E.: A New Meningococcus-Like Organism (Neisseria flavescens n. sp.) from Epidemic Meningitis, Reprint N. 1968, Pub. Health Rep., 45:845, No. 16 (April 18), 1930.

by its pigment production and failure to ferment certain sugars. Serologically, however, the new micro-organism is wholly unrelated to previously known meningococci, since it is not agglutinated by any of the older type antiserums. Thirty per cent of the spinal fluids received from one locality contained this new coccus, whose pathogenicity is indicated by the fact that the mortality in these selected cases was at least 30 per cent.

W. H. MANWARING, Stanford University.

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**Ligation of Pulmonary Vessels in Pulmonary Tuberculosis.**—In 1923 Schlaepfer[1] advocated a combination of phrenicotomy and ligation of the lower branches of the pulmonary artery for pulmonary tuberculosis in man, upon the basis of animal experimentation. He had found that ligation of the pulmonary artery was followed by a dense fibrosis of the lung with shrinkage. The purpose of phrenicotomy was to compensate for shrinkage of the lung by the rise of the diaphragm. He also proposed partially occluding the pulmonary veins with Halsted bands which should be removed later. However, he considered this latter procedure as only of academic interest in the state of thoracic surgery at that time. Lately there have been some reports on human patients, of the therapeutic effect of ligature of pulmonary veins in cavernous tuberculosis, by Edel[2] and Kerschner.[3] In four patients in whom other forms of collapse therapy (pneumothorax and phrenicotomy) had failed, ligation of the pulmonary veins was resorted to. The intervention has a favorable influence on the foci of infection as well as on the cavities. The operation is performed under a general anesthetic. An incision, 10 centimeters in length, is made along the upper border of the third rib, which is temporarily resected. By blunt dissection the hilus of the lung is approached and the branches of the pulmonary vein identified. The ligation is done with strong silk thread, which is never knotted tightly, so as to avoid cutting into the vein. Pulmonary edema which had been observed in animals does not develop because there is never a complete ligation of all the branches of the pulmonary vein. The object of the operation is not a complete obstruction of venous drainage of the lung, but a prolonged stasis in its most severely affected portions.

The operation is not intended as a substitute for thoracoplasty but rather as an alternative which is of special use in those patients having rigid cavities. These seem to be helped more by ligation than by thoracoplasty. In fact thoracoplasty has its greatest number of poor results in just these patients. The above clinical work is of interest in that it gives the thoracic surgeon a new weapon in the methods available for the surgical treatment of pulmonary tuberculosis.

A. LINCOLN BROWN,
San Francisco.

1 Schlaepfer, Karl: (a) Fibrosis of the Lung Following Ligation of the Pulmonary Artery Combined With Phrenicotomy and With Partial Occlusion of the Pulmonary Veins, Arch. Surg., 6:558, 1923. (b) Ligation of the Pulmonary Artery of One Lung With and Without Resection of the Phrenic Nerve—Experimental Study, Arch. Surg., 9:25, 1924. (c) Ligation of the Pulmonary Artery Combined With Resection of the Phrenic Nerve in Chronic Inflammatory Conditions, Especially Tuberculosis of One Lung, Am. Rev. Tuberc., 10:35, 1924-1925.

2 Edel, H.: Ligature of Pulmonary Veins in Cavernous Pulmonary Tuberculosis, Zeitschrift fur Tuberkulose, Leipzig, 60:177-256 (April), 1931.

3 Kerschner, F.: Ligature of Pulmonary Veins in Pulmonary Tuberculosis, Zeitschrift fur Tuberkulose Leipzig, 60:177-256 (April), 1931.

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*Prophylaxis of Ringworm of Feet.*—Earl D. Osborne and Blanche S. Hitchcock, Buffalo (*Journal of the American Medical Association,* August 15, 1931), report a method for the prophylaxis of ringworm of the feet which has proved satisfactory as judged by fungicidal tests in the laboratory and from practical experience in the high schools of the city of Buffalo and in many other public and industrial institutions. About a year ago it was suggested to one of them that it might be worth while to test out the fungicidal activity of sodium hypochlorite, the common, cheap and harmless bactericide used in most city water supplies. They at once tested out the fungicidal activity of this chemical to five common types of fungi found on the feet of persons suffering from ringworm. From these tests it was evident that a solution of 0.5 per cent sodium hypochlorite should kill all the common fungi found in ringworm of the feet with exposure of fifteen seconds to these organisms in a watery suspension. Fresh moist deposits of ringworm organisms on the feet should, therefore, be killed with 0.5 per cent sodium hypochlorite, provided the organisms have not penetrated to the deeper cells in the horny layer of the epidermis. With the experimental data at hand, the T. A. Patterson Laboratories supplied the Buffalo high schools, at cost, with sufficient rubber pans and sodium hypochlorite solution to carry out this method of prophylaxis for a period of one year. The company had a special rubber pan prepared whose inside measurements were two feet on a side. These pans were made of heavy rubber and weighed approximately sixty pounds. One pan was placed on the floor of the corridor between the dressing rooms and the shower baths, and another pan was placed at a point past which all the pupils had to pass just before putting on their clothes. The pans were filled up to the two-inch mark with 0.5 per cent sodium hypochlorite solution and this solution was changed every morning. Although the solution was never diminished to such an extent that a refill was necessary, it was evident that a large number of persons stepping in and out of the pan on the way to the shower bath might gradually deplete the solution. A slight, but not appreciable, dilution of the chemical occurred. In order to allow for this dilution and for a margin of error, the authors have recently recommended the use of one per cent sodium hypochlorite instead of 0.5 per cent solution. Up to May 2, 1931, this method of prophylaxis has been employed in the Buffalo high schools for a period of from nine to twelve months. The physical directors of each school have been carefully advised regarding the method and the checking of results. All the complaints have been transmitted to the director of physical education of the Buffalo public schools. He stated that in former years a great many complaints were received and that many new cases of ringworm of the feet appeared each year among high school students. The director of physical education of the public schools of Buffalo reported that this year he had not received a single complaint from parents or pupils because of the appearance of ringworm of the feet. The various directors of the different schools have been well informed on the disease and have been unusually alert in the detection of new cases. None were reported for the entire year. In private practice the authors have noticed a drop in the incidence of new cases of ringworm of the feet in high school pupils of the city of Buffalo. Their records fail to show a single new case, although numerous ones have appeared from the surrounding towns.—*Nebraska Medical Journal,* October 1931.

# STATE MEDICAL ASSOCIATIONS

## CALIFORNIA MEDICAL ASSOCIATION*

JUNIUS B. HARRIS.....President
JOSEPH M. KING.....President-Elect
EMMA W. POPE.....Secretary

### OFFICIAL NOTICE

**Next Council Meeting.**—The date of the January meeting of the Council has been set for January 16. The meeting will be held in the offices of the Association, 2004 Four Fifty Sutter Street, San Francisco.

### COMPONENT COUNTY SOCIETIES

#### CONTRA COSTA COUNTY

The annual business meeting of the Contra Costa County Medical Society was held in Richmond on November 10, with President Dr. W. A. Rowell in the chair. The following applications for membership were approved.

Dr. H. E. Peters of Pittsburg, Dr. Kaho Daily of Richmond on a transfer from San Francisco County Medical Society, and Dr. R. C. Leggo of Crockett on transfer from Solano County Medical Society.

The society unanimously passed a resolution recommending to the Board of Supervisors that hospitals and physicians treating emergency cases which later proved to be county charges should be compensated by the county for their services. On motion by Dr. U. S. Abbott this resolution was amended to recognize the industrial fee schedule in determining the proper fee in these cases. Copies of this resolution were ordered forwarded to each of the supervisors and the committee was instructed to attend the next meeting of the board to urge its acceptance.

In memory of our deceased member, Dr. P. C. Campbell of Richmond, who passed away on October 16, 1931, the secretary read the obituary written by Dr. C. R. Blake. The annual report of the secretary was read and approved. The question of dividing the membership of the society into two branches was brought up for discussion. It was decided to leave the initiative in this matter to the interested members and the proposition was tabled until the next meeting for lack of proper sponsorship. The Veterans' Insurance plan offered by Doctor Brothers of Texas in a recent issue of the American Medical Association bulletin was explained by the secretary. Doctors Beard, Beede, Bumgarner, Wise, Gregory, Neufeld, Todd, Nevius, Weil, and Fraser were appointed to contact the veterans' organizations in their respective localities. Before instituting any definite campaign of education among veterans' organizations, it was deemed advisable to ascertain from the State Association and the American Medical Association whether they have endorsed any definite plan or approved any official policy on this question. This information is to be obtained by the secretary and submitted at the next meeting. Dr. C. O. Bishop was appointed chairman of the committee to arrange for the annual banquet to be held on December 5. Doctors Stauffer, Church, Beede, and Leggo were named to assist him. The sentiment of the majority in attendance favored Richmond as the place of choice for this affair.

The following officers were elected for the year 1932: S. N. Weil, president; J. L. Beard of Martinez, vice-president; Clara Spalding of Richmond, secretary. A. H. Beede of Walnut Creek was elected censor for three years, and C. O. Bishop of Richmond for two years to complete the unexpired term of Dr. P. C. Campbell, deceased. I. O. Church was chosen as an alternate delegate to complete the unexpired term of J. F. Feldman, who has moved to another part of the state.

A joint buffet supper with the Woman's Auxiliary was enjoyed after the meeting.

L. H. FRASER, *Secretary.*

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#### NAPA COUNTY

The regular monthly meeting of the Napa County Medical Society was held at Marino's Grill, Napa, on October 14, the business meeting being preceded by a dinner.

The meeting was called to order by President R. S. Northrop.

Members present were: H. V. Baker, M. M. Booth, G. I. Dawson, C. A. Gregory, C. A. Johnson, D. H. Murray, C. E. Nelson, R. S. Northrop.

Dr. R. S. Rood, Napa State Hospital, attended as a visitor.

During the month two members of the Napa County Society were taken by death: Dr. Herbert R. Coleman of Napa and Dr. Edward F. Donnelly of the Napa State Hospital staff. It was moved, seconded, and carried that suitable resolutions of sympathy be drawn and copies sent to Mrs. Coleman and to Mrs. Donnelly.

It was agreed that poliomyelitis convalescent serum should be secured from the Hooper Foundation for Medical Research in San Francisco and that the same should be kept at the Victory Hospital, Napa, that it might at all times be available to members of the Napa County Medical Society.

Informal discussion of problems such as state medicine and medical education through proper publicity in the local press occupied the remainder of the meeting.

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The regular monthly meeting of the Napa County Medical Society was held Wednesday, November 4, at the Veterans' Home, Napa County. Through the courtesy of Colonel Holderman, Commandant of the Home, and the board of directors, an excellent dinner preceded the business meeting.

The meeting was called to order by Dr. Robert Northrop, president, and the minutes of the previous meeting read and approved.

Members present were: M. M. Booth, W. L. Blodgett, G. I. Dawson, C. A. Gregory, C. A. Johnson, A. K. McGrath, A. H. McLeish, D. H. Murray, C. E. Nelson, R. S. Northrop, R. E. Poole, L. Welti, and G. J. Wood.

Visitors who attended the meeting were: E. E. Bull and A. R. Kilgore, San Francisco; Doctor Bryan, Mare Island; S. S. Bogel and W. C. Shipley, Santa Rosa; F. L. Fuller Veterans' Home; B. M. Johnson, R. S. Rood, T. H. Stice, and Doctor Shumate, Intern, Imola; H. Rogers, Petaluma; T. Russel, Napa.

Dr. J. M. Scandland of the Napa State Hospital was unanimously elected to membership by transfer from the San Francisco County Medical Society.

The following officers were then elected for the year of 1932: C. H. Bulson of Napa, president; C. A. Johnson of Napa, vice-president; and M. M. Booth of St. Helena, secretary-treasurer.

Dr. A. R. Kilgore of San Francisco spoke briefly about the work of the Cancer Commission of the California State Medical Association.

* For a complete list of general officers, of standing committees, of section officers, and of executive officers of the component county societies, see index reference on the front cover, under Miscellany.

The speaker of the evening, Dr. Edward C. Bull of San Francisco, presented a masterly discussion of "Fractures" and displayed x-ray films to illustrate many interesting cases.

C. A. JOHNSON, *Secretary.*

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### SAN BERNARDINO COUNTY

The regular meeting of the San Bernardino County Medical Society was held on November 3 at the County Hospital.

The following men were accepted into the society by vote: Doctors R. Barkema, T. J. Rankin, E. B. Godfrey, D. Brumbaugh, H. Garcelon, and C. A. Love.

The program of the evening was then entered upon as follows:

"Treatment of Undescended Testicle" (illustrated by lantern slides)—Dr. E. J. Eytinge Redlands.

"Oblique Inguinal Hernias" (motion picture demonstration)—Dr. C. Lewis Gaulden, Los Angeles.

Discussion was held on these papers jointly and was opened by Dr. Philip Savage of San Bernardino.

The meeting adjourned at 9:30 o'clock for refreshments after the speaker of the evening had been extended thanks by the president.

E. J. EYTINGE, *Secretary.*

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### SAN JOAQUIN COUNTY

The stated meeting of the San Joaquin County Medical Society was held Thursday evening at 8:30 o'clock on October 1 in the Medico-Dental club rooms at 242 North Sutter Street, Stockton.

The meeting was called to order by President George H. Sanderson.

A motion was made by Dr. J. E. Barnes, seconded by Dr. J. D. Dameron, that in the future all papers on the program of an advertising or nonmedical character be read after the scientific program. The motion was carried.

In the matter of a talkie-movie film offered by a pharmaceutical house, Dr. J. D. Dameron moved that our programs be confined to scientific papers. This motion was duly seconded and carried.

The first paper on the scientific program was a report by Dr. F. B. Sheldon on "Impressions of Eastern Cancer Clinics," following his recent visit to the Atlantic Coast.

Doctor Sheldon visited the Hutington Cancer Clinic at Boston; Hanville Clinic, twenty-two miles from Boston; and the New York Memorial. The Hanville Clinic, with 120 beds, is the largest of its kind in the world. It is planned to add fifty more beds since they now have a waiting list of patients.

Doctor Sheldon stated that preoperative irradiation makes operation more difficult because of the blood engorgement of the tissues which persists for two or three weeks. Postoperative irradiation is being discontinued also.

In the inoperable cases the use of radium and of x-ray is useful in relieving symptoms, especially pain. At the New York Memorial they have nine grams of radium, the largest amount held by any institution in the world. Four grams of this is enclosed in a lead bomb with a window, and is used for direct exposures four to six inches from the skin.

Dr. Robert R. Newell of San Francisco read a paper on "Use of the X-ray in Treatment of Malignant Diseases." Doctor Newell first called attention to cancer as a terrible scourge, presenting the greatest problem of modern scientific medicine. Present therapy is not rational because it is not based on knowledge of the etiology of cancer. Some early cases yield readily to surgery; others do as well under x-ray and radium treatment. Which to use should be decided only after a serious consultation of surgeon and radiologist.

The greatest field of usefulness for x-ray and radium is in the field of palliation. Some types of malignancy are highly resistant and should not be given the roentgen treatment—such as carcinoma of the stomach, advanced carcinoma of the face, some brain tumors, and carcinoma of the prostate. All others should have full dosage and the patient's comfort will be greatly aided.

Radiation is not the solution of the cancer problem, but it is an invaluable means for relief.

There being no further business the meeting was adjourned and refreshments served.

C. A. BROADDUS, *Secretary.*

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### SANTA BARBARA COUNTY

By invitation of the members in the northern end of the county, the Santa Barbara County Medical Society held its regular meeting in Santa Maria on November 9 at the Santa Maria Club. A dinner of barbecued steak was served to forty-seven members and visitors.

Dr. H. J. Ullmann, president of the society, opened the meeting and turned it over to Vice-president O. C. Jones.

The program of the Southern California Medical Association for November 13 and 14 was read.

A letter from Mr. H. A. Lofy offering to open a physicians' exchange in Santa Barbara was read. When put to vote there was no support and the secretary was instructed to so notify Mr. Lofy, stating that the society was not opposed to it if any wished to subscribe.

Dr. W. Ray Jones of Seattle was introduced, and with many lantern slides gave a very interesting paper on "John Doe's Gonorrhea." The paper was discussed by Doctors Johnson, Gillihan, and Conser.

Dr. C. G. Toland of Los Angeles then gave a fine paper on "Thyroid," touching on its many phases, with lantern slides of patients, tables of two hundred recent cases, and diagnosis and treatment. It was in his usual fine and comprehensive style and was much enjoyed. Discussion was by Doctors Sansum, Shelton, and Dunkley of San Luis Obispo.

P. C. MEANS, *Secretary Pro Tem.*

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### STANISLAUS COUNTY

The regular meeting of the Stanislaus County Medical Society was held at the Hotel Hughson on November 13.

Dr. F. R. DeLappe gave a short talk on "Council Proceedings."

A vote of thanks was extended Dr. J. A. Collins for his work as president of the County Association for the past year.

The regular annual election of officers was next held. The office of president was filled by Dr. E. F. Hagedorn, Modesto; of vice-president by Dr. J. A. Porter, Modesto; of secretary-treasurer by Dr. Donald L. Robertson, Modesto; as censor, Dr. E. G. Allen of Patterson.

DONALD L. ROBERTSON, *Secretary-Treasurer.*

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### VENTURA COUNTY*

The regular monthly meeting of the Ventura County Medical Society was held on October 13 at the Ventura County Clinic building.

The meeting was called to order by Doctor Achenbach.

Those present were: Doctors Little, Welch, Achenbach, R. M. Jones, Hendricks, Fellerbaum, Bardill, Illick, Homer, Armitstead. Visitors: Doctors Foskett, Clark of Santa Barbara, and Drace of Ojai.

Doctor Strong's application was read, the motion for acceptance being made by Doctor Hendricks and seconded by Doctor Bianchi. The motion was voted on and carried.

The committee on by-laws was appointed as follows: Dr. Hendricks (chairman), Bardill, and Bianchi. A request was made to write Doctor Pope for

* **Erratum Notice.**—Dr. Harold Walgrove Wright, late president of the Ventura County Medical Association, was born on May 11, 1883 and died at Ojai, July 12, 1931. Doctor Wright, therefore, was 48 years of age, not 78 years.

a copy of the latest by-laws of the State Medical Association. This concluded the buiness session.

The scientific program was presented by Doctor Ullmann of Santa Barbara, who gave an illustrated lecture on cancer and treatment.

R. B. ARMITSTEAD, *Secretary.*

## CHANGES IN MEMBERSHIP

### New Members

*Alameda County*—Alice M. Burke, Harris Davis Loe.

*Humboldt County*—Clarence Crane, Lowell Kramar.

*Los Angeles County*—Royall H. Bandelier, James DeWitt George, H. Henry Greenway, Morton Myron Mayers, Waldo Cooper Pendleton, Harry James Powers, Ethelred Fisher Robinson, Elizabeth Adrienne Sirmay, Leonard R. Thompson.

*San Bernardino County*—Charles Leslie Dale, Donald H. Brumbaugh, H. Garcelon, Philip W. Lawler.

*San Diego County*—Thomas S. Whitelock, Jr.

*San Francisco County*—Felix Cunha, Margaret A. Eakin, Lee James Hand, Albert Paul Krueger, John J. McGuire, Douglas G. Macpherson.

*Santa Barbara County*—Daniel Maurice Clark.

*Santa Clara County*—Donald Richard Threlfall.

### Resignations

Charles N. Gruesel, from San Bernardino County.

### Transfers

Thomas C. Austin, from Los Angeles to Kern County.

Giuseppe Vercellini, from Los Angeles to Fresno County.

### Deaths

**Briggs, William Ellery.** Died at Sacramento, November 6, 1931, age 78 years. Graduate of Cleveland College of Physicians and Surgeons, Ohio, 1877. Licensed in California, 1879. Doctor Briggs was a member of the Sacramento Society for Medical Improvement, the California Medical Association, and a Fellow of the American Medical Association.

**Dawson, William Calhoun.** Died at San Francisco, November 14, 1931, age 52 years. Graduate of the University of California Medical School, San Francisco, 1907. Licensed in California, 1907. Doctor Dawson was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

**Mead, Francis H.** Died at San Diego, November 15, 1931, age 68 years. Graduate of the University of Durham College of Medicine, Newcastle-upon-Tyne, 1885; the Royal College of Physicians, London; and the Royal College of Surgeons, England, 1885. Licensed in California, 1893. Doctor Mead was a member of the San Diego County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

**Smith, Walter Albert.** Died at Modesto, October 19, 1931, age 54 pears. Graduate of Keokuk Medical College of Physicians and Surgeons, Iowa, 1908. Licensed in California, 1920. Doctor Smith was a member of the Stanislaus County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

**Stigall, Clarence Golden.** Died at San Diego, September 17, 1931, age 45 years. Graduate of University of Louisville School of Medicine, Kentucky, 1907. Licensed in California, 1919. Doctor Stigall was a member of the San Diego County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

**Strader, Harvey W.** Died at Sacramento, November 11, 1931, age 72 years. Graduate of the College of Physicians and Surgeons of Baltimore, Maryland, 1885. Licensed in California, 1892. Doctor Strader was a retired member of the Sacramento Society for Medical Improvement, the California Medical Association, and the American Medical Association.

**White, Carlos Moulton.** Died at Visalia, November 6, 1931, age 56 years. Graduate of Rush Medical College, Chicago, 1901. Licensed in California, 1901. Doctor White was a member of the Tulare County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

## CALIFORNIA MEDICAL ASSOCIATION CANCER COMMISSION

To be told that one has cancer does not necessarily mean a death sentence. The percentage of actual cures among the commoner forms of cancer is being increased every year as physicians become more and more skilled in the use of established and proven methods, and as improvements in the technical methods of surgery and especially radium and x-ray are developed. Each year shows a steady and, in some instances, rapid increase in the percentage of cures within definite groups of cancers, and such orderly development in the treatment and cure of this dread disease should proceed faster and faster as knowledge and experience increase. The development of new methods of using radium, for example, with accompanying improvements in results, is occurring so rapidly that it is difficult for anyone not devoting a large part of his time and interest to the work to keep up with the rapid changes. Today with radium dosage multiplied ten to twenty times but with caustic radiation screened out by heavy filtration, it is possible to achieve results with certain cancers far in advance of the possibilities of even five years ago.

Man has looked for panaceas from the beginning of time; in the Middle Ages, for the fabulous philosopher's stone that would cure every ill—in more recent times for a specific remedy for a specific disease, and has discovered quinin for malaria, antitoxin for diphtheria, serum for epidemic meningitis, insulin for diabetes.

Man is still seeking such a specific for cancer—an amulet hung around the neck, a "radio-active" water, a miracle-working paste, or a marvelous substance to be injected into the body.

For reasons that are only too painfully obvious to the student of cancer, it is extremely unlikely that any specific cure for cancer will ever be found, as cancer is not a single disease but a whole group of diseases with certain common characteristics. Expending money upon research which holds so little hope of success seems questionable judgment. But this does not apply to the development and perfection by clinical and laboratory research of methods which have yielded a measure of success when intelligently and skillfully applied.

The California Medical Association Cancer Commission conceives its objective as including the encouragement of research of this type in California—advancing the technique of known methods of cancer therapy.

It is becoming trite to state, yet it cannot be repeated too often, that early diagnosis and early treatment do result in cures. We must cut down: (1) the time between first symptoms and first examination by a doctor; (2) the time between first examination by a doctor and institution of correct treatment.

The broad objective of the California Medical Association in the cancer field includes, therefore, encouragement of clinical research, public education and the advance of skill and knowledge in the medical profession of California.

We are convinced that those who go into a fight believing that fight hopeless are doomed to defeat. We hold a spirit of optimism and firm belief in ultimate success even in the face of previous discouragements. Civilization once considered the plagues, leprosy and smallpox, hopeless. Today science has almost eradicated them and their terror has disappeared. So, even though our very lives are challenged, we meet the enemy with courage and the conviction of ultimate success, for, although the number of cancer cases is increasing, the percentage of cures is increasing also.

HENRY J. ULLMANN, M. D.

## THE WOMAN'S AUXILIARY TO THE CALIFORNIA MEDICAL ASSOCIATION*

### Component Auxiliary Meetings

*Sacramento County Auxiliary* reports an interesting meeting in October at Del Paso Country Club.

Mrs. A. M. Henderson, president, was hostess at a beautifully appointed dinner, which preceded the meeting. The tables were decorated with fall foliage and chrysanthemums.

Mrs. W. H. Sargent, state president, was the guest of honor and the speaker of the evening.

The following musical program was given: Vocal solos by Mrs. Harry Kanner and Madame George Iki, with Mrs. Eugene Pitts at the piano. Violin solos by Mrs. Ernest Myers of Roseville.

Mrs. Frederick Scatena entertained as her guest, Mrs. S. W. Weil of Rodeo, second vice-president of the state organization. Mrs. Ernest Meyers of Roseville was the guest of Mrs. E. S. Babcock. Mrs. A. A. Alexander of Piedmont, recording secretary of the state organization, was also an out-of-town guest. The Courtesy Committee, which assisted the president, Mrs. Henderson, consists of the following members: Mrs. F. P. Brendel, Mrs. T. W. Kelsey, and Mrs. R. G. Pearson.

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*Alameda County Auxiliary* held its regular meeting on the second Friday of November at the Oakland Club House on Montecito Avenue.

Mrs. G. G. Reinle, retiring president, reported a splendid growth of the auxiliary since it started two years ago, having now a membership of 210.

Mrs. Robert S. Leet, secretary-treasurer, reported the auxiliary in good financial condition. Mrs. A. A. Alexander, state recording secretary, read interesting excerpts from an address by Doctor Kinney at the June convention in San Francisco in which he gave excellent advice on the work to be done by auxiliaries and ending with this important thought for the year's work: "The doctor's wife must know the facts."

Mrs. W. H. Sargent, state president, gave an inspirational talk on the work accomplished in many different auxiliaries throughout the nation.

Mrs. Hayward G. Thomas gave two delightful solos on the piano.

The election of officers took place, followed by installation. The new president, Mrs. Thomas J. Clark, gave a witty, informal talk on her work in taking up the gavel as the new leader.

A vote of thanks was given to Mrs. Reinle and Mrs. Leet for having so successfully tended the infant auxiliary through the first two years of its existence.

The meeting closed with a reception and tea to the following new members: Mrs. Thomas J. Clark, president; Mrs. Charles A. Dukes, president-elect; Mrs. George Rothganger, vice-president; Mrs. Sidney K. Smith, recording secretary; Mrs. Douglas E. Stafford, corresponding secretary; Mrs. Alvin Powell, treasurer. Members of Council: Mesdames Chesley Bush, C. H. Miller, R. J. Nutting, Clarence W. Page, W. H. Streitmann, and H. G. Thomas.

### National Auxiliary News

We regret to announce that Mrs. Walter Jackson Freeman, our national president-elect, is yet detained in Europe by the illness of her son. His convalescence is slow though apparently definite. Mrs. Freeman's return is uncertain though hoped for before the end of the year.

*Hygeia.*—Your national president, Mrs. A. B. McGlothlan, and your national chairman for *Hygeia*, Mrs. Robert N. Herbert, desires your national press and publicity chairman to give you with these items a special reminder concerning *Hygeia.*

There are many auxiliary women who are enthusiastic about *Hygeia.* There are some who are indifferent. What, would you say, is the occasion for this difference in attitude?

It would be a safe wager that the indifferent auxiliary woman is one who does not see and read *Hygeia.* Familiarity in this case is a cure for indifference.

Did you know the *Hygeia* subscriptions through auxiliary efforts are more than 50 per cent over what they were last year?

Did you contribute to this increase? If so, congratulations to your ward. Keep up the good work. If you did not so contribute, join the army now of those who read *Hygeia* and want to spread its gospel.

From the office of our national president, Mrs. A. B. McGlothlan, 821 North Twenty-fourth Street, St. Joseph, Missouri, or from the national *Hygeia* chairman, Mrs. Rogers N. Herbert, 1509 Stratton Avenue, Nashville, Tennessee, you may secure any one of the following auxiliary productions:

*Hygeia* talks and suggestions for their use:

(a) *Hygeia,* a Help for Teachers.

(b) *Hygeia,* a Help for Mothers.

(c) How the Nurse Can Use *Hygeia.*

(d) *Hygeia* for Leaders of Teen-Age Girls.

(e) Why the Doctor Is Interested in *Hygeia.*

One of the approved uses to which your communities' share in the fund from the tuberculosis Christmas seal stamps may be applied is the placing of *Hygeia* in the public schools.

Here are two other good suggestions; plan to use subscriptions to *Hygeia* as Christmas gifts. Send to *Hygeia* publishers lists of heads of families of children where *Hygeia* is not taken, but where it might be taken and appreciated.

* * *

*Kentucky Bulletin.*—The Woman's Auxiliary to the Kentucky State Medical Association is receiving deserved praise from the State Board of Health for important services.

All who have received the November bulletin of the Kentucky State Board of Health are impressed with the successful way in which the important information is presented to the reader.

In the foreword this sentence appears: "The State Board of Health desires to express its gratitude to the Woman's Auxiliary to the Kentucky State Medical Association for the splendid way in which this work has been accomplished."

The "question and answer" form in which this information is assembled makes it easy to read and easy to understand. Such joint work of state boards of health and woman's auxiliaries to state medical associations open up a new sphere of helpfulness to auxiliaries.

This Kentucky bulletin is devoted to the medical and health laws of Kentucky and the United States Public Health Service as it applies to that state, and is designed especially for all Kentucky state schools and colleges. It is surely highly valuable as well to all citizens.

* * *

*Program Work in Kansas.*—In Kansas the present publicity chairman, Mrs. J. T. Hunter, is asking all auxiliaries to look over their records and refresh their memories of past activities, and report not only present proceedings, but all interesting plans and activities engaging any of the auxiliaries in the past. It is believed valuable results may issue from these exchanges of experiences and ideas.

* * *

*Philanthropic Work in Pennsylvania.*—Last summer's philanthropic work of the Dauphin County, Penn-

* As county auxiliaries to the Woman's Auxiliary of the California Medical Association are formed, the names of their officers should be forwarded to Mrs. Louis H. Dyke, Chairman of Publicity and Publications Committee. Brief reports of county auxiliary meetings will be welcomed by Mrs. Dyke and must be sent to her before publication takes place in this column. For lists of state and county officers see advertising page 6. The Council of the California Medical Association has instructed the editors to allocate one page in every issue for Woman's Auxiliary notes.

sylvania, Auxiliary was outstanding. Its Welfare Committee took little vacation, for during the twelve weeks of the Christmas seal camp, provided by the Tuberculosis Society for sixty-six children, this committee took care of the sewing and mending for those children, provided all the jellies and six dozen cakes weekly, and several treats of ice cream and candy; provided fifty pairs of blunt scissors for the children's use; donated a bookcase for the recreational hall; and arranged weekly entertainments for the children. This was certainly very fine auxiliary care for tuberculous children.

MRS. LOUIS H. DYKE,
*Chairman Publicity and Publications Committee.*

# NEVADA STATE MEDICAL ASSOCIATION

A. C. OLMSTED, Wells.....President
O. HOVENDEN, McGill.....President-Elect
J. H. HASTINGS, Pioche.....First Vice-President
E. E. HAMER, Carson City.....Second Vice-President
HORACE J. BROWN, Reno.....Secretary

## NEVADA STATE MEDICAL ASSOCIATION ANNUAL SESSION OF 1931

The twenty-eighth annual meeting of the Nevada State Medical Association was called to order on September 18, 1931, at 9:20 a. m. by the president, R. P. Roantree, in the assembly room of the Nevada Hotel, Ely, Nevada.

President Roantree made a short welcoming address after which Mr. William R. Woods, supervisor of this district for the Bureau of Industrial Alcohol, was introduced and gave a short talk on the use and abuse of physicians' alcohol prescriptions.

The regular order of the program was then taken up.

**Scientific Papers.**—Rulon S. Tillotson, M. D., Woodland, California, read a very interesting paper on *"The Nasal Accessory Sinuses as Sources of Infection."* Paper was discussed by E. M. Neher, W. D. Donoher, R. R. Hampton, and R. S. Tillotson.

E. M. Neher of Salt Lake City read a paper on *"Practical Suggestions for the Care and Treatment of the Eyes by the Physician in General Practice,"* which was discussed by Rulon S. Tillotson, E. E. Hinckley, A. G. Thomas, R. R. Hampton, and E. M. Neher.

Clarence Snow of Salt Lake City read a paper on *"Cardiac Disease,"* which was well illustrated by a number of lantern slides.

The above program closed the scientific session for the first day. The members and visitors were then taken to the Nevada Consolidated Copper Company's hotel at Ruth where an excellent luncheon was served. Following this a trip was made into the enormous copper pit. Upon return to Ely the business meeting was called to order at the Nevada Hotel at 4:30 p. m., with President Roantree in the chair.

On motion, the reading of the minutes of the previous session was dispensed with.

**New Members.**—On motion of M. A. Robison, seconded by R. A. Bowdle, the following were elected to membership:

Dan Coll of Susanville, California; W. W. Cook of Ely, Nevada; Bart Hood, William B. Johnson, W. H. Miller, John E. Wright of Reno, Nevada; Francis J. Morley of Gardnerville, Nevada; W. B. Ririe of East Ely, Nevada; F. M. Schramm of Hawthorne, Nevada; W. W. Stockham of Caliente, Nevada; John Stile of Alturas, California; James Thom of Carson City, Nevada.

**Deaths of Members During Last Year.**—The secretary reported that the following members have passed away since our last meeting:

G. W. Green, Ely, Nevada; C. J. Hood, Adrian, Michigan; W. S. Harrison, Overton, Nevada; M. J. Rand, Ely, Nevada.

This report was referred to the Necrology Committee for suitable memorial resolutions.

**The Report of the Military Committee.**—This report was made by T. W. Bath. It was voted that the report be accepted and made a part of the minutes.*

**Emeritus Life Members.**—Secretary Brown proposed the name of Dr. F. J. Crane, who has been an active member of this Association for many years and who has now retired from active practice, for honorary life membership. Moved by M. A. Robison, seconded by G. O. Bradley, that the president and secretary be empowered to grant emeritus life memberships to Doctor Crane and all other members as such reach the age of retirement. Carried.

**Honorary Members.**—On motion of C. E. Piersall, seconded by M. A. Robison, the visiting essayists who are not already honorary members were made such.

**Vote of Thanks to Hosts.**—Moved by T. W. Bath, seconded by A. Huffaker that a vote of thanks be extended to the White Pine County Medical Society and the Nevada Consolidated Copper Company for the entertainment and many courtesies shown us. Carried.

**Balopticon.**—Moved by M. A. Robison, seconded by A. C. Olmsted that a balopticon be purchased. Carried.

**Woman's Auxiliary.**—A communication from the Woman's Auxiliary of the American Medical Association was read in which request was made that an auxiliary be formed in Nevada. It was voted that the communication be received and filed.

**Institute of Criminology.**—A communication was read from the American Medical Association concerning the forming of an Institute of Criminology in Nevada. Moved by D. A. Turner, seconded by C. E. Piersall, that the communication be received and filed. Carried.

**George Washington Bicentennial Commission.**—A communication was received from the George Washington Bicentennial Commission asking that we pass a resolution endorsing their program and enclosing a form of resolution. It was voted that this resolution be adopted and made a part of the minutes.

**Nevada Hospital for the Insane.**—Several members spoke on the unsatisfactory manner of handling patients at the Nevada Hospital for the Insane. It was voted that the president appoint a committee of three to investigate the conditions at this institution and report at the next annual meeting. The president appointed on this committee E. L. Creveling, S. K. Morrison, and Horace J. Brown.

**Election of Officers.**—The following officers were elected to serve for one year:

President-elect, O. Hovenden, McGill.
First vice-president, J. H. Hastings, Pioche.
Second vice-president, E. E. Hamer, Carson City.
Secretary-treasurer, Horace J. Brown, Reno.
Delegate to American Medical Association, Horace J. Brown, Reno.
Alternate, W. H. Frolich, East Ely.

**Next Annual Meeting.**—Moved by D. A. Turner, seconded by A. C. Olmsted, that the next annual meeting be held at Reno, and if possible at Bowers Mansion. Carried.

**Secretary's Expenses.**—Moved by D. A. Turner, seconded by T. W. Bath, that Horace J. Brown be allowed the sum of $100 in addition to his salary to partly compensate him for unusual expenses incurred in attending this meeting. Carried.

Adjournment.

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The meeting was called to order on September 19, 1931, at 9:25 a. m., President Roantree in the chair.

M. Greene of Brooklyn, New York, was introduced and addressed the Association on *"Modern Methods of Treating Neuralgia in Its Relation to the Nerve Block,"* which was illustrated by lantern slides and the showing of the various instruments used in this work.

Walter G. Schulte of Salt Lake City read a paper on *"Hematuria."*

* This report by Dr. T. W. Bath is printed in this issue of California and Western Medicine, page 431.

Miley B. Wesson of San Francisco read a paper on *"Intravenous Pyelography (Uroselectan and Skiodan)—Its Value to the General Practitioner"*; with lantern slide demonstration.

Discussion of both the foregoing papers was by R. A. Bowdle, R. S. Tillotson, C. E. Piersall, and L. Michelson. The discussion was closed by Doctors Schulte and Wesson.

Martin C. Lindem of Salt Lake City read a paper on *"Surgical Infections."* Discussed by G. W. Pierce, W. H. Frolich, and J. E. Tyree.

George Warren Pierce of San Francisco read a paper on *"Recent Advances in Reconstruction Surgery."* Illustrated by moving pictures and lantern slides. Discussed by M. C. Lindem and J. E. Tyree.

J. E. Tyree of Salt Lake City read a paper on *"The Shoulder Joint."*

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**Introduction of President-Elect Olmsted.**—President Roantree then introduced the president-elect, A. C. Olmsted of Wells, and turned over to him the gavel of authority.

**Visit to Nevada Consolidated Copper Company.**—There being no further business the meeting adjourned *sine die* and the members and visitors were taken to McGill, where the Nevada Consolidated Copper Company had prepared another excellent luncheon. After the luncheon a tour of inspection of the smelter was made.

**Attendance.**—The following members were in attendance at various times during the meeting: H. E. Belnap, Thomas Bath, G. L. Belanger, Horace J. Brown, R. A. Bowdle, G. O. Bradley, Jack C. Cherry, W. H. Frolich, J. H. Hastings, D. J. Hurley, E. E. Hinckley, O. Hovenden, A. Huffaker, E. B. Muir, A. C. Olmsted, C. E. Piersall, M. A. Robison, R. P. Roantree, D. A. Turner, J. M. Thorup, and W. B. Ririe.

**Honorary Members.**—The following honorary members and visitors were also present at various times during the meeting: Mrs. R. A. Bowdle, B. E. Bonde, M. Greene, R. R. Hampton, J. Kerby, M. C. Lindem, L. Michelson, E. M. and Mrs. Neher, W. D. Donoher, George W. Pierce, Clarence Snow, Rulon S. Tillotson, J. E. Tyree, A. G. Thomas, W. G. Schulte, Miley B. Wesson, and Mr. William R. Woods, Jr.

R. P. Roantree, *President.*
Horace J. Brown, *Secretary.*

## COMPONENT COUNTY SOCIETIES

### WASHOE COUNTY

On Tuesday evening, November 10, a joint meeting of the Washoe County Medical Society and the Washoe County Dental Society convened at the State Building.

The object of the meeting was to see the Castle film showing the relation of nutrition to dental health.

After reading the applications for membership of Doctors Magee of Yerington and Hund and Williams of Reno, all of whom were accepted for membership, the president asked the secretary to read the resolutions on the death of Dr. William L. Samuels, which occurred in Reno on November 1.

The resolutions were received and ordered to become a part of the minutes of the society. Following this Mrs. Inman Samuels of Reno, who has been investigating the possible acquisition of the Reno Hot Springs for health purposes, read a very splendid but brief paper on the history and mineral properties of the springs. The president appointed a committee to make general investigations.

Next followed the dental film, an object lesson of the highest scientific endeavor and of the greatest practical application. The film exhibited teeth from the mummies of the Pharoah days of Egypt, and of the pueblo Indians of Peru and North America.

From these ancient people, especially the Egyptians, it seemed tooth decay with its accompanying distress was prevalent in those ancient days. The exhibits of experiments on monkeys and rats by insufficient vitamin diet showed conclusively that dental decay results from a nonbalanced diet with the absence particularly of vitamin C.

By a coördinating diet of milk, eggs, vegetables, meat, butter, fruit juices, or tomatoes, sometimes medicinally helped out with some iron preparations and cod-liver oil, it was demonstrated that dental caries and gingivitis are controlled and physical as well as dental health is restored. Going back to first measures it might be suggested that a more scientific examination of the parturient mother with reference to blood calcium and iron content, and to a properly balanced diet, would greatly influence the metabolism of the fetus, and bring about the millenium so much desired—one where dentists with their drills and forceps would cease to be the fear of child and adult alike.

Who knows if science may not at an early date require this in the interest of the parturient mother and child, as it now should require that every parturient mother receive enough iodin to rid the country of goiter in future generations?

Thomas W. Bath, *Secretary.*

# UTAH STATE MEDICAL ASSOCIATION

R. A. PEARSE, Brigham City.....President
F. M. McHUGH, Salt Lake City.....President-Elect
L. R. COWANS, Salt Lake City.....Secretary
J. U. GIESY, Kearns Building, Salt Lake City
.....Associate Editor for Utah

## COMPONENT COUNTY SOCIETIES

### SALT LAKE COUNTY

The regular meeting of the Salt Lake County Medical Society was held at the Latter Day Saints Hospital Monday evening, October 26. Forty-four members and three visitors were present.

The meeting was called to order by President F. M. McHugh.

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The following resolution of the Necrology Committee was passed:

RESOLUTION OF REGRET

Whereas, Death has once more struck at the ranks of our profession and removed from our midst our professional brother, Dr. C. F. Wilcox; and

Whereas, We the other members of the Salt Lake County Medical Society mark his passing with feelings of regret born of long knowledge and acquaintance; be it

Resolved, That we hereby express that regret and tender to his family our most sincere sympathy in their loss; and that a copy of this resolution be made a part of the official minutes of the society, and a copy forwarded to the widow of the deceased.

* * *

The clinical program of the evening included papers on "A Neuropsychiatric Case" by John Llewellyn, "Ruptured Kidney" by Spencer Wright, and "Mixed Tumor of the Kidney" and "Basal Cell Carcinoma of the Arm" by L. R. Cowan.

The meeting adjourned at 9:10 o'clock after which refreshments were served.

Barnet E. Bonar, *Secretary.*

### Deaths

**Wilcox, Charles Frederick, Sr.** Died November 18, 1931, age 72 years. Doctor Wilcox was a graduate of the New York University Medical College, New York, 1890. Licensed to practice, 1893. Doctor Wilcox was a member of the Salt Lake County Medical Society, the Utah State Medical Association, and a Fellow of the American Medical Association.

**Worlton, Frederick Daniel.** Died November 19, 1931, age 49 years. Doctor Worlton was a graduate of the Rush Medical College, Chicago, 1912. Licensed to practice, 1912. Doctor Worlton was a member of the Utah County Medical Society, the Utah State Medical Association, and a Fellow of the American Medical Association.

# MISCELLANY

Under this department are ordinarily grouped: News; Medical Economics; Correspondence; Twenty-five Years Ago column; Department of Public Health; California Board of Medical Examiners; and other columns as occasion may warrant. Items for the News column must be furnished by the twentieth of the preceding month. For Book Reviews, see index on the front cover, under Miscellany.

## NEWS

**Rife Microscope Demonstration.**—What might be called a supermicroscope, invented by Royal Raymond Rife, Ph. D., of San Diego, was shown on November 20 at the home of Dr. Milbank Johnson in Pasadena. Doctor Johnson, who is one of the founders of the Phi Rho Sigma Fraternity, had invited a former classmate, Arthur I. Kendall, head of the department of research bacteriology of the medical school of the Northwestern University to come to Los Angeles to test out this new instrument devised by Doctor Rife, which is such a radical departure from existing microscopes. The opening article in this number of CALIFORNIA AND WESTERN MEDICINE gives further details. The instrument was set up on the stone fireplace in the living-room of Doctor Johnson's residence and the physicians who had been invited to be present had the opportunity, each in person, to see micro-organisms at a magnification of five thousand diameters. In addition to the host, Dr. Milbank Johnson, and the guests of honor, Doctors Arthur I. Kendall and Royal R. Rife, there were present the following colleagues from Los Angeles and Pasadena: Doctors S. Fosdick Jones, C. M. Hyland, V. L. Andrews, Alvin G. Foord, Wayland Morrison, F. C. E. Mattison, Joseph Heitger, E. M. Hall, C. W. Bonynge, A. S. Hoyt, E. W. Butt, R. W. Lamson, A. H. Zeiler, R. W. Hammack, G. D. Maner, Ellis Jones, J. Brandon Bruner, Samuel J. Mattison, George Dock, O. O. Witherbee, Harold Witherbee, B. O. Raulston, Linford Lee, W. H. Scions, W. V. Brem, George H. Kress, Richard Winter, Albert Ruddock, Allan B. Kanavel, Aubrey Davidson, and R. B. Hill.

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**Meeting of Northern District Society.**—The semiannual meeting of the Northern District California Medical Society was held October 13 at the Traveler's Hotel, Sacramento.

The following officers were elected for the ensuing year: D. Schuyler Pulford of Woodland, president; Edward S. Babcock, Jr., of Sacramento, secretary; W. E. Bates of Davis, treasurer; Richard O. Schofield of Hobart Mills, first vice-president; Bart Powell, Jr., of Stockton, second vice-president. Board of Censors—Junius B. Harris and Frederick N. Scatena, Sacramento; Granville S. Delamere, Marysville; Newton T. Enloe, Chico; and C. Verner Thompson, Lodi.

The society elected the above officers by acclamation.

Edward S. Babcock of Sacramento presented a paper on "Cerebrospinal Meningitis"; H. J. Templeton of Oakland, "The Management of Premalignant and Malignant Conditions of the Skin"; and Alson Kilgore of San Francisco outlined the program of the Cancer Commission of the California Medical Association.

After dinner, attended by ninety-four, Doctor Lawhead of Woodland related interesting anecdotes of some of the older members of the society and Junius B. Harris, president of the California Medical Association, gave an amusing lantern slide talk on incidents in the early life of some of the most revered members.

Three charter members, William Ellery Briggs of Sacramento, George W. Stratton of Marysville, and T. P. Perry of Yuba City, were present at the meeting.

**Coming Meetings.**—*American Medical Association,* New Orleans, Louisiana, May 9-13, 1932, Olin West, M. D., 535 North Dearborn Street, Chicago, Illinois, Secretary.

*California Medical Association,* Hotel Huntington, Pasadena, May 2-5, 1932, Emma W. Pope, M. D., Room 2004, 450 Sutter Street, San Francisco, Secretary.

*Philippine Islands Medical Association,* Manila, December 15-18, A. S. Fernando, M.D., 817 Taft Avenue, Manila, Secretary.

*Society of American Bacteriologists,* Baltimore, December 28-31, James M. Sherman, M. D., Cornell University, Ithaca, New York, Secretary.

*American College of Physicians,* San Francisco, California, April 4-8, 1932, William J. Kerr, University of California Medical School, Fourth Avenue and Parnassus, San Francisco, General Chairman.

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**Lane Medical Library Historical Section Dedication.**—Professor Henry S. Sigerist, the director of the Institute on the History of Medicine of Leipzig, Germany, who is now giving a course of lectures at Johns Hopkins University, will be present and assist in the dedication of the historical section of the Lane Medical Library and give two lectures on the history of medicine at the Medical School of Stanford University on January 11, 12, and 13, 1932.

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**Nineteen Thirty-Two Lane Lectures.**—The Stanford University School of Medicine, San Francisco, announces a special course of popular medical lectures during the winter quarter of 1932 in celebration of the fiftieth anniversary of these lectures. The popular medical lectures were established by Dr. Levi Cooper Lane in 1881. Doctor Lane was the founder of the Cooper Medical College, now the Stanford University School of Medicine, the Lane Medical Library, and the Lane Medical Lectures. The popular medical lectures have been given in San Francisco during fifty consecutive years with increasing appreciation by the public. The lectures for 1932 are appropriately offered as a summary of the outstanding achievements in medicine during the past half-century. The following program of lectures by outstanding representatives of the respective fields in medicine has been arranged, to be given on alternate Friday evenings at 8 o'clock in Lane Hall, Stanford University School of Medicine, Sacramento and Webster streets, San Francisco:

January 8—"Dr. Levi Cooper Lane and the Popular Medical Lectures," Dr. Emmet Rixford, San Francisco.

January 22—Half-Century of Progress in the Recognition and Treatment of Disease," Dr. George Dock, Pasadena.

February 5—"Achievements in Surgery of the Past Fifty Years," Dr. Andrew Stewart Lobingier, Los Angeles.

February 19—"Contribution of Experimental Biology and Medicine to the Alleviation of Human Suffering," Dr. Herbert M. Evans, Berkeley.

March 4—"Social Aspects of Child Welfare, Dr. Henry Dwight Chapin, New York City.

March 18—"Fifty Years of Progress in the Prevention of Disease," Dr. Jacob Casson Geiger, San Francisco.

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**Northern District Eye, Ear, Nose, and Throat Meeting.**—On September 8, 1931, the meeting of the Northern District Eye, Ear, Nose, and Throat Society was held at the Sutter Club, Sacramento, preceded by a dinner. Seventeen members were present.

Dr. W. E. Briggs, chairman, presided.

The papers of the evening were given by Doctors M. A. Haworth and Barton Powell, Jr.

The meeting adjourned to meet again the second Tuesday in October in Sacramento.

**Secretaryship of the American Medical Association Council on Medical Education and Hospital.**—The *Journal of the American Medical Association* of November 28, 1931, in its abstract of minutes of meetings of Board of Trustees held in Chicago, November 12 and 13, 1931, prints the following item: "On the nomination of the Council on Medical Education and Hospitals, Dr. William D. Cutter, formerly dean of the University of Southern California, was elected secretary of the Council to succeed Dr. Nathan P. Colwell, who has been retired on account of indisposition."

**Postgraduate Courses in Medicine and Surgery in Berlin.**—The Association of Lecturers (Dozentenvereinigung) for medical postgraduate work in Berlin is an association of about two hundred professors, docents, and directors of hospitals and disposes altogether of over twenty thousand beds. The offices are located in the Kaiserin Friedrich-Haus, Berlin NW 6, Luisenplatz 2-4. Any who are interested can obtain booklets of information by writing to the above address.

**The Western Branch Society of the American Urological Association** held its seventh annual meeting at San Francisco, November 6 and 7.

An exceptionally good program was provided and the attendance was above the average at all sessions.

The following officers were elected for the 1932 meeting, which will be held at Portland, Oregon, July 1 and 2, 1932: Dr. H. Welland Howard of Portland, president; Dr. A. W. Hunter of Vancouver, president-elect; Dr. F. S. Dillingham of Los Angeles, secretary-treasurer.

The following were elected members of the Executive Committee: For one-year term, Dr. Walter G. Schulte, Salt Lake City; for two-year term, Dr. Wirt B. Dakin, Los Angeles; for three-year term, Dr. Miley B. Wesson, San Francisco.

# MEDICO-LEGAL

## EXPERT MEDICAL TESTIMONY—WHAT CAN THE COURTS DEMAND?

### An Important Recent California Supreme Court Decision

A decision of unusual importance and interest to the profession was rendered by the Supreme Court of the State of California in the case of Peggy Webb et al. vs. The Francis J. Lewald Coal Company et al., 82 Cal. Dec. 595.

The relevant facts of the case are as follows:

Dr. Joseph Catton of San Francisco had examined the plaintiff, Peggy Webb, at the request of her attorney, and submitted a report to him. The plaintiff did not produce Doctor Catton as a witness, and he was subpoenaed by the defendants. When called to the stand he refused to give any testimony concerning his examination of Peggy Webb, taking the position that he had been called by the attorney for the plaintiff to make the examination, and it would be unethical for him to testify at the request of the defendants, and, further, that no financial arrangements had been made with him by the defendants to testify.

The District Court of Appeal, in passing on this question, said:

"All that Doctor Catton need do, if the trial court was correct, to keep from the stand would be to demand such an amount for testifying as would be impracticable for defendants to pay. Such is not the law. 'The authorities, however, all agree that, in the absence of an express contract to pay a physician for his testimony as an expert, he is only entitled to the statutory fee. The uniform rule seems to be that a physician who has acquired knowledge of a patient or of specific facts in connection with the patient, may be called upon to testify to those facts without any compensation other than the ordinary witness receives for attendance upon court. In those states recognizing the right to extra compensation for a physician who testifies as an expert it is uniformly held that where such testimony is sought to be elicited without requiring any particular investigation on the part of the physician that he is required to testify without extra compensation.' "

This decision was brought to the attention of the Council of the California Medical Association, and Hartley F. Peart, the Association's attorney, was instructed to file a brief as *amicus curiae* on the hearing of the case in the Supreme Court. Mr. Peart in his brief took the position that an expert may not be compelled to testify to matters of opinion as distinguished from facts within his knowledge unless arrangements shall have been made with him to compensate him, and pointed out that the decision in the case of McClenahan vs. Keyes, 188 Cal. 574, merely held that where an expert witness voluntarily attends the court and testifies, he cannot recover extra compensation on the theory that he was an expert witness; that there was no implied contract for the payment of extra compensation due to the fact that the doctor had been used as a witness, and that the only other decision by the Appellate Courts of California, namely, that of People vs. Conte, 17 Cal. App. 771, holds that a physician cannot be compelled without compensation to make an examination of an exhibit where it would be necessary for him to use his expert knowledge in making such examination in order to prepare himself to testify as an expert.

Many interesting decisions from courts of other states were presented on this subject in the brief of the general counsel. One of the most interesting is the case of United States vs. Cooper, 21 D. C. 491, where the court said:

"But the case is different where a person is summoned to testify not as to facts, but to give the result of his knowledge upon a question of a scientific character involved in the suit. That is something which such person is no more obliged to communicate without compensation to a court or jury than he is to give gratuitously to the general public the result of his erudition upon any subject involving research; for this is his own property, his stock in trade, which he can no more be required to present as a free gift to the public than the merchant can be forced to surrender his goods at the bidding of a court for the public benefit."

The Supreme Court in dealing with the position of Doctor Catton and his refusal to testify from ethical considerations said in part:

"First, it is our conclusion that the testimony was privileged under the broad language of subdivision 4 of section 1881 of the Code of Civil Procedure, which reads in part: 'A licensed physician or surgeon cannot, without the consent of his patient, be examined in a civil action, as to any information acquired in attending the patient, which was necessary to enable him to prescribe or act for the patient. . . .' The word 'act' used in this connection seems to cover the very service performed by the witness here. He acted for respondent by making the examination and by making and delivering to her counsel a written report of his findings. He was her physician and she his patient only for this limited purpose. This seems clearly also to be a case where such information would be of value to the attorney in the proper presentation of her case.

"But counsel insists that a controlling exception to the above rule is found in the further provision of said subdivision 4 of said section, which reads as follows: 'Provided, further, that where any person brings an action to recover damages for personal injuries, such action shall be deemed to constitute a consent by the person bringing such action that any physician who has prescribed for or treated said person and whose testimony is material in said action shall testify. . . .' We do not believe that the words 'prescribed for or treated' of this proviso cover the identical scope of the words 'to prescribe or act' found in that portion of said subdivision 4 above quoted. Webster defines the word 'prescribe' as—to direct, designate or order the use of a remedy as, 'the doctor prescribed quinine'; he defines the word 'treat' as—to care for medicinally or surgically. A physician may properly act for a patient without having thereby prescribed for or treated him and the case before us seems fairly to be an illustration of this fact.

"Moreover, if it be conceded that the witness neither prescribed for, treated nor acted for respondent as a patient, the testimony sought by the particular question at least was privileged, nevertheless, under subdivision 2 of said section 1881 in that it appears that respondent caused herself to be examined and a report made for the purpose of aiding her counsel in the presentation of her cause. In other words, 'communications between an at-

torney and the agent of his client are also entitled to the same protection from disclosure as those passing directly between the attorney and his client' (28 R. C. L., sec. 161, p. 571)."

On the question of the right of an expert witness to compensation, the Supreme Court said:

"The troublesome question as to when it is proper in litigation between private parties to compel an expert witness to give his professional opinion, without consent or compensation, though discussed by counsel and by amici curiae, does not fairly arise on this record; hence it will not be here considered."

This decision, written by Mr. Justice Preston, and concurred in by the entire court, leaves open the question of when, and under what circumstances, an expert witness is entitled to compensation as not fairly arising on the record in the case, and eliminates the adverse doctrine of the decision by the District Court of Appeals. At the same time the ruling as quoted above protects the physician and surgeon acting as an agent for an attorney in the confidential communications made by the physician as such agent to the attorney for the party.

## LEGAL LICENSE IS NECESSARY FOR MEDICAL PRACTICE IN CALIFORNIA

In October an interesting decision was handed down in the Appellate Department of the Superior Court in Los Angeles, having to do with the right of a person holding an M. D. degree, who had secured a license to practice in California, to hold himself before the public of California as an M. D. with implied right to practice medicine. A memorandum which has come to the editor gives the following additional information:

A state has the right to enact a statute declaring that no person shall put the letters M. D. after his name unless he shall have been admitted to practice within the state. The mere fact that the person using the degree may actually have acquired such a degree by study from a university, or that he may have been licensed to practice in another state does not entitle him to practice in the State of California. Nor does a law which refuses to deny the right to persons licensed in other states to practice medicine in California violate the Constitution.

Declaring these principles, the Appellate Department of the Superior Court in an opinion written by Judge Victor R. McLucas and concurred in by Judge Leon R. Yankwich has upheld the conviction of Orrin Joslin for holding himself out as a physician and using the letters M. D. after his name. Joslin was tried before Judge Frank M. Smith and a jury, who found him guilty. He was fined $250. There being nothing unconstitutional in the provisions which deny the right to use the letters M. D. to those not licensed in California

## "RADIO METHOD" THERAPY—AN APPELLATE COURT DECISION THEREON

Readers of California and Western Medicine who perused the excerpt from the Santa Ana *Register*, as printed in the second column of the California State Board department on page 408 of the November California and Western Medicine, will no doubt agree that the methods therein detailed have less merit for use than many of the remedies given in the series of articles on "Sixteenth Century German Medicine" which were printed in the July, August, and September 1930 issues of this Journal. If some of the remedies of several hundred years ago were provocative of laughter or ridicule, the same could be stated of the measures used by the osteopathic practitioner in our present day and generation, as reported above.

The full legal report of the case is printed in the August 26, 1931, *California Appellate Decisions*,* page 608, and makes interesting reading. To better appreciate the excerpt from the Appellate Court decision, which is printed below, it is desirable that the item from the Santa Ana *Register* be first read, that item in itself being a rare gem more than worthy of the small amount of time necessary for its perusal. The full decision covers some eighteen pages, and from this the following concluding paragraphs are taken:

"The appellants contend that the witnesses, offered as experts, were not qualified as such to answer the hypothetical questions as to the proper methods of treatment, not using these methods themselves, and knowing nothing concerning them. The appellant, Lloyd E. Tilbury, testified that he was an osteopathic physician and that he had perfected what he termed a diagnostic machine which he used for the purpose of diagnosing the patient's illness. After ascertaining the nature of the disease his patient was suffering from, he would treat the disease with another machine known to him as the "radio method." Such machines were only known to Dr. Tilbury and were his own invention not in general use, nor accepted by any of the schools of medical practice or drugless healing. The qualifying questions were sufficient to establish the competency of the several medical doctors offered as witnesses by the plaintiff by reason of the fact that their education and experience was such as to qualify them to testify as expert allopathic physicians and surgeons. The basis of the objection to their competency as witnesses concerning the method of treatment as administered by Dr. Tilbury goes to the treatment of respondent's ailment by appellants' radio methods, about which they testified they knew nothing, such methods not being recognized by the allopathic school of medicine.

"These objections to the testimony went to the weight, rather than to the competency of the evidence. Simply because a person claims to have some new process or method of healing peculiar to himself is no reason why other persons who do not claim such process or method are not, from education and practice, competent to judge whether the treatment administered was negligently or carelessly done. If we should hold otherwise, it would open the door to all sorts of nonprofessional persons who would undertake to treat all kinds of diseases and disorders, and no evidence could be brought to establish the negligence of such treatment. The practitioner, knowing that no such person could be found to testify against him with regard to such negligence, the injured person would be without remedy, and this cannot be the law. This view is also expressed in Longan vs. Weltmer, 180 Mo. 322, 79 S. W. 653, 103 Am. St. Rep. 573. The value of an opinion of an expert witness depends on his intelligence, knowledge and experience, and his testimony is a guidance for the jury. What weight, if any, they will give to such testimony is entirely with them.

"Dr. Diebold, who qualified as an osteopathic physician, testified that the methods used by the defendant were unknown to the practice of osteopathy and that a physician who did use such methods did not use ordinary care and diligence. This, like the answers of the allopathic testimony, went to the weight of the evidence, rather than to its competency, and it was for the jury to decide whose testimony they would rely upon. We might go one step farther and say that the opinion of an expert that the treatment must have been improper, based on the result of recovery, is evidence on which the jury may find negligence. (Sawyer v. Berthold, 134 N. W. 120, 116 Minn. 441; Reardon vs. Richmond, etc., 21 Cal. App. 357, 359.)

"Much stress is laid to the fact that the form of the questions was such as to usurp the prerogative of the court and the jury as to negligence. In answering defendants' contention, it must be understood that the defendants were not treating the plaintiff by the methods of the osteopathic school of treatment, but by the "radio method," a method of Dr. Tilbury's invention, a method of an unknown quantity. When one, with his own inventions, holds himself out as a healer of diseases and accepts employment as such, he must be held to the duty of reasonable skill in the practice of his profession, and when he seeks fields of experimentation he will be held accountable for any damages proximately caused by the unskillful treatment of his patients.

"This court passes no judgment on the theory of his profession, the source from whence it came, nor the appliances with which he works. With these we have no concern, but rather look to the results. The law holds him responsible if he does his work unskillfully, although he does the best he can. He assumes the risk of the quality and accuracy of his genius or inventions. On the same principle one who holds himself out as a medical expert and accepts employment as a healer of diseases, but who relies for diagnosis and remedies on some mechanical invention of his own, which invention is unknown to all schools of medical science, in like manner takes the risk of the quality and accuracy of such mechanical invention. If these move so imperfectly or inaccurately that he fails to treat the patients with reasonable skill, he is liable for the consequences. The law takes cognizance of the question: Did the practitioner render the services he undertook in a reasonable manner? That question as applied to the appellant, Lloyd E. Tilbury, the jury, on sufficient proofs, we believe, have answered in the negative.

"While it is true that the physicians who testified on the part of the plaintiff did not claim or pretend to know anything about the practice of the "radio method," they were nevertheless competent, from education and experience, to testify as to whether the treatment which plaintiff underwent was proper. Simply because a person claims, or pretends to have invented a machine for diagnostic and curative purposes which is not known or recognized by any school of medical science, which machine possesses certain powers of healing peculiarly within the knowledge of the inventor, is no reason why other persons who know nothing of the workings of such machine but who have knowledge acquired from education, experience and practice, are not competent to judge

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whether the treatment administered is negligently or carelessly done. Otherwise as we have heretofore indicated, any nonprofessional person might undertake to treat certain disorders, and if appellants' position be correct in law, it matters not how carelessly or negligently his acts were performed, because no one could be obtained of the same pretensions to testify with respect to such treatment and the injured person would be without remedy. This contention we think untenable and has been so held by other jurisdictions."

## MEDICAL SPECIALISTS

### Canadian Regulations Thereon

Licensure of medical specialists is a subject which is not infrequently discussed in medical meetings. In Canada, the Province of Alberta has legal regulations covering such licensure. Through the courtesy of President Robert C. Wallace of the University of Alberta the editor has received copies of the "Regulations Concerning Medical Specialists," and also of the "Regulations Concerning Dental Specialists." The regulations regarding medical specialists are here reprinted for their suggestive value. It is to be noted that these regulations are analogous to what would be "state laws" in the United States, and that the administration is through the "province university," or what would be a "state university" in the United States of America. (See, also, filler item on page 480 of this issue of CALIFORNIA AND WESTERN MEDICINE.) The regulations are as follows:

#### REGULATIONS CONCERNING MEDICAL SPECIALISTS IN THE PROVINCE OF ALBERTA, CANADA

The following regulations regarding specialists in medicine are published under the authority of an Act to amend the Medical Profession Act, assented to April 8, 1926.

* * *

*The Medical Profession Act Amendment Act, Section 2, states as follows:*

2. The Medical Profession Act, being Chapter 209 of the Revised Statutes of Alberta, 1922, is amended as to Section 70 thereof by adding thereto as Subsections (2), (3), (4) and (5), the following:

"(2) No person shall advertise or hold himself out to the public as a specialist or as being specially qualified in any branch of any class or system of practice in this section mentioned, without having received from the registrar of the University of Alberta a certificate of having complied with such conditions precedent as to qualification or fitness as may be prescribed by the senate of the said university.

"(3) The said conditions may be based either upon the possession of certain diplomas or other professional qualifications or upon compliance with prescribed tests by way of examination or otherwise.

"(4) Any person committing a breach of Subsection (2) of this section shall be liable to the same penalty as if he had committed a breach of Subsection (1).

"(5) Any breach of this section shall be deemed to be unbecoming and improper conduct within the meaning of Section 45 of this Act."

* * *

*Pursuant to the authority conferred upon the Senate by the above, the Senate of the University of Alberta, Canada, has enacted the following regulations:*

1. The term "specialist" used in the said Act shall, for the purpose of these regulations, be defined as a graduate of a medical school recognized by the Senate of the University of Alberta who, having complied with the educational requirements set forth hereunder, has been granted the right to practice in some special field of medicine or surgery in the Province of Alberta.

2. Candidates shall have (*a*) one year's experience as graduate interne in a recognized and standardized general hospital, or (*b*) three years' experience in the general practice of medicine or surgery, and in either case shall thereafter have spent not less than eighteen months in training for their chosen specialty, or shall have the equivalent of such training. The hospital for special study shall be connected with an institution capable of giving graduate instruction or it shall be a recognized teaching hospital in which instruction in the special department concerned is given. The candidates shall act as internes, externes or clinical assistants during the time of the special training referred to above and shall be required to show credit for attendance; further, they shall pass such examinations as the senate may prescribe.

3. Candidates who were registered as members of the College of Physicians and Surgeons of the Province of Alberta prior to the enactment of these regulations shall receive due consideration for the length of time of practice and for the experience obtained during that time in the specialty for which a certificate is sought.

4. Candidates must conform to the code of ethics laid down by the Canadian Medical Association.

5. (*a*) There shall be a special committee to be known as *The Committee on Specialists in Medicine and Surgery*, consisting of the following: the Dean of the Faculty of Medicine, the head of the Department of Medicine, the head of the Department of Surgery, the head of the Department of Pathology, the head of the Department of Bacteriology and Hygiene, the Deputy Minister of Public Health (if a doctor of medicine), the Registrar of the College of Physicians and Surgeons of the Province of Alberta, and such other members of the medical profession in the Province as may be appointed from time to time by the senate on the nomination of the president of the university.

(*b*) Such committee shall consider all applications for specialists' certificates and make their report thereon with their recommendations in respect thereto to the senate.

(*c*) Applications, accompanied by credentials, shall be sent to the registrar of the University of Alberta for consideration by the Committee on Specialists in Medicine and Surgery.

# CORRESPONDENCE

### Subject of Following Letter: Comments on Selection of a Health Officer for the City of Los Angeles

EDITOR'S NOTE.—In Los Angeles Dr. Granville MacGowan has often been referred to as the dean of the medical profession of that city. He was president of the California Medical Association in the year 1924.

He will also be remembered by those of a more recent generation as having been the colleague who instituted the suit against the "Medical Service Corporation," in which suit the opinion was handed down by the court declaring it to be illegal for corporations to practice medicine in California.

The following letter is a copy which was sent to the editor and is here printed because it bears on some editorial comments in this issue of CALIFORNIA AND WESTERN MEDICINE (see page 458).

* * *

October 27, 1931.

The Board of Councilors,
Los Angeles County Medical Association, Addressed.
Gentlemen:

In the troubles which the health commissioner, Doctor Parrish, is having I notice a condition which I have never known before. In the charter of the city, under which my friend Henry Hazzard was elected mayor, those parts which related to the health department, board of health, health commissioner, or health officer, as he was then called, were written by Dr. Joseph Kurtz and myself. The board of health consisted of four members and the mayor; these members did not all have to be physicians, but three of them did and it was arranged so that the board of health should be divided in such a way that two of the members should belong to the Republican party and two to the Democratic party. We were very anxious that the board of health should never be used as a political factor.

During the time of my successor, the late Doctor Powers, for four years, I was the power behind the throne. I overlooked everything that related to changes in law, and gave all matters a great deal of attention. I arranged all laws and ordinances relating to the health department and took care that in the succeeding mayor-

alities of the Harper, Eaton, and Snyder administrations no changes were made in the health department without notification and consultation. Of course we were country people then, but we did very well with our health department, and we were always ready to meet emergencies when they arose. The medical profession was always consulted, and of the members of the board of health at least two were medical men.

Through a change, which I do not understand, the health board during the present administration has consisted of laymen altogether. I do not know how or why this occurred, but it is bad business and distinctly inimical to the medical profession, the members of which are better qualified by their education and by their attainments in health matters, to pass upon such matters than any set of laymen who could be chosen.

I have no brief to defend Doctor Parrish; he has been a wonderfully capable health officer. . . .

The present board has chosen a good clean man to succeed Doctor Parrish, but a man without any definite experience in health matters, and he unquestionably is being placed in a position where, under the present method of constituting a health board, he is liable to be sorry that he accepted the appointment.

Under any circumstances, I warmly commend to the councilors of the Los Angeles County Medical Association the advisability of informing themselves, if a change cannot be made in the character of the appointments, so that the Los Angeles County Medical Association be represented by at least two members on the board of health, and that at least one of the remaining members be a sanitary engineer.

Gentlemen, accept my respects.

GRANVILLE MacGOWAN.

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**Subject of Following Letters: A Query to Eastern Public Health Authorities on Los Angeles Public Health Situation, and Replies Thereto.**

*To the Editor*:—In connection with some recent events in the health department of the city of Los Angeles, I am taking the liberty of sending to CALIFORNIA AND WESTERN MEDICINE copies of a letter which I wrote, and the replies thereto from H. S. Cumming, M. D., surgeon general of the United States Public Health Service and from John A. Ferrell, M. D., of the International Health Division of the Rockefeller Foundation. It seems to me that these reply letters should be of interest to members of the California Medical Association.

Respectfully submitted,

Los Angeles. E. H. ANTHONY.

* * *

*Letter From Doctor Anthony to Doctors Ferrell and Cumming*

October 28, 1931.

John A. Ferrell, M. D.,
Associate Editor, Rockefeller Foundation,
61 Broadway, New York City, N. Y.
and
Hugh S. Cumming, M. D.,
Surgeon General, U. S. Public Health Service,
Washington, D. C.

Dear Doctors:

Having been at one time a health commissioner of Los Angeles, and being interested in public health, I would like to submit to you for my own information a hypothetical question.

The charter of the city of Los Angeles requires that a doctor shall have at least three years' administrative experience in health work before he can qualify for the position of health officer.

Would three years as colonel in the Medical Corps of the United States Army during the World War, with no other public health experience, and in private practice since that time, qualify a physician and surgeon for this position?

Personally I believe that the very best medical officer of experience in public health should be secured for a city of over a million people as has Los Angeles, and I am also opposed to a layman board of health.

Trusting to hear from you, I am

Fraternally yours,

E. H. ANTHONY.

* * *

*Reply of Surgeon General Cumming*

November 3, 1931.

My dear Dr. Anthony:

I have your letter of October 28, addressed to Dr. Ferrell and myself, requesting our opinion as to whether service for three years as colonel in the Medical Corps of the Army during the World War and private practice since that time with no other public health experience would qualify a physician and surgeon for the position of health commissioner of Los Angeles, and informing us that your city charter requires three years' administrative experience in public health work as a prerequisite for appointment to a position of health officer.

I thoroughly agree with you that a city such as Los Angeles should employ none but an experienced man for such an important position. Your question is rather hard to answer categorically unless one knows the particular duties to which the man was assigned during his service as a medical officer of the Army during the war. For instance, if he spent his three years' service upon a detail in connection with sanitation, acting as health officer of camps or communities, the experience would certainly be very valuable in giving an opportunity for study of public health methods. If, on the other hand, the individual were simply engaged in surgical work or administrative work other than public health, such service would have been of comparatively little use.

It has been thirteen years since the war ended and during this period there have been marked advances both in administrative and technical public health work. If such an individual had dissociated himself from contact or interest in public health work and devoted himself to ordinary clinical medicine during that period, he would certainly be greatly handicapped in assuming the office of commissioner in charge of the health of such a great city as Los Angeles.

Sincerely yours,

H. S. CUMMING,
Surgeon-General.

* * *

*Reply of Associate Director Ferrell*

November 4, 1931.

Replying to your letter of October 28, I beg to advise that I have noticed from the newspapers that Doctor Parrish has been succeeded as health officer by Dr. Charles W. Decker. I regret I do not know these gentlemen well enough to warrant an opinion as to their respective qualifications as city health officer. In general I am an ardent advocate of placing public health on a professional basis and as rapidly as practicable requiring minimum eligibility qualifications for the important positions. The preparation for the work, I believe, would involve both school of public health training and successful experience.

Very truly yours,

JOHN A. FERRELL.

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**Subject of Following Letter: Notice from California Board of Medical Examiners' Office on an "Insurance Company Laboratory" Solicitor.**

San Francisco, California,
November 6, 1931.

Yours of October 8,
Re: E. Osmun (or Osman).

Gordon L. Helstrom, M. D.,
115 South Sierra Avenue,
Fontana, California.

Dear Doctor:

The California Medical Association has forwarded us your letter relating your experiences with E. Osmun, an alleged M. D., who you state is traveling around the state claiming to represent about 120 insurance companies and that he has been delegated to select a medical examiner in each town, his reimbursement consisting of $1 for each specimen of urine sent to the San Diego Laboratories; however, each examiner selected by him is charged a fee for "form blanks and containers for urine."

Robert P. Little, M. D., 139 North Tenth Street, Santa Paula, relates a similar experience with a "Dr. Osman of Hollywood, (claiming to be) a graduate of Columbia University Medical College some thirty years ago," who called on Dr. Little, stating that he represented leading insurance companies, relating that the examination of urine was to be made in his "Hollywood Laboratory," he requesting Dr. Little to give him $3.50 in advance to pay for postage necessary to send Dr. Little's name to the various insurance companies.

Osmun is apparently working a petty "racket," the sum involved being so small that no doubt he will be able to impose on a number of licentiates.

We are sending a copy of this letter to Dr. Little, who fortunately was suspicious and is, therefore, $3.50 ahead of the game.

We hope that more licentiates, when approached by Osmun will be suspicious, which will soon put a stop to this new "racket."

We will use our every endeavor to head him off and will suggest to the editor of CALIFORNIA AND WESTERN MEDICINE that they issue a warning in that publication.

Very truly yours,

C. B. PINKHAM, M. D.,
*Secretary-Treasurer.*

# LEGAL CHECKS IN CALIFORNIA ON PRACTICE OF MEDICINE*

California has been one of the outstanding states in waging a relentless warfare against both the dealers in fraudulent professional credentials and against those who, by fraud, attempt to secure a license to treat the sick and afflicted.

There are now eighty-one acceptable medical schools in the United States that maintain a high standard of educational excellence. The Association of American Medical Colleges, the Council on Medical Education and Hospitals of the American Medical Association and the Federation of Medical Examining Boards are administrative bodies that share with these excellent medical schools the educational responsibilities so necessary to supply adequately trained and properly qualified practitioners of medicine and surgery.

* * *

Fraudulent credentials will be found just as long as there are dishonest persons in this world of ours; hence, it becomes necessary to erect legal obstacles and pass punitive measures with penalties sufficiently severe to discourage the making and the use of professional credentials.

Enacted regulatory measures designed to control this situation are effective only when administered honestly and fearlessly by an executive officer trained by long experience in evaluating credentials, and who has accumulated a resourceful fund of nation-wide historic knowledge regarding medical education and licensure.

Weak corporation laws in California as well as in many other states permit a so-called "university" or "medical college" or any other professional school to obtain from the state a charter with power to operate. The incorporators are not called upon to make any showing of financial responsibility, physical equipment or teaching personnel.

In California, five persons, perhaps feeling the urge to gather in some easy money, can frame a legal document known as "articles of incorporation" bristling with the most formidable legal verbiage, empowering the corporation to do everything. This document with a fee is filed in the Secretary of State's office, and—behold—the state thereupon confers power to said corporation to grant any kind of a professional degree and to issue any kind of a professional diploma. In the majority of instances the "campus" is under the hats of the incorporators, and when they find any gullible purchaser for one of these "gold brick" diplomas, the promoters open their suitcases, declare a "commencement," and forthwith issue an ornate though worthless diploma.

California, as well as other states, has taken steps to correct this evil, though much is yet to be done to stop the incorporation of "fly-by-night" colleges and to regulate the operation of some loosely conducted professional schools that they may maintain a semblance of educational responsibility.

The California law was strengthened by chapter 719, Statutes 1931, that requires an annual report to be filed with the State Superintendent of Public Instruction by every corporation school, college, etc., having power to confer any professional degree. This report shall contain the course of study offered, names and addresses of all students, names and addresses of all teachers with the subjects taught by them, the degrees granted, the curricula on which such degrees were granted and any other information concerning the educational work or activities of said corporation as may be required by the Superintendent of Public Instruction. Failing so to do is a misdemeanor.

California in this law now has an added agency by which she can regulate those who fail to furnish adequate professional education to students who enroll. This law will lower the number of victims that heretofore have complained that promoters of "fly-by-night" colleges have influenced them to pay large sums for a most inadequate course and a valueless though ornate diploma.

California has been the "birthplace" of more than one diploma mill, but the "wares" of these "mills" have not been accepted by the Board of Medical Examiners of the state of California.

The Pacific Coast Medical College, operated in San Francisco some thirty years ago, was one of the earlier diploma mills. It is referred to in the early correspondence as a "fraudulent institution which was closed by the Board of Medical Examiners and the graduates of which college have never been admitted to practice in this State." The name was changed in 1903 to the West Coast Medical College. It has been reported that thirty-one medical diplomas were issued from this institution that existed only on paper.

* * *

Sporadic attempts have been made to forge credentials from reputable California medical colleges or to obtain from them by fraud bona fide medical credentials. More than one bogus medical diploma bearing the name of a defunct California medical college has been discovered through the vigilance of the executive officer of the California Board of Medical Examiners whose scrutiny of all professional credentials has spared California the ignominy of falling victim to the scheming diploma mill operators.

Years of administrative experience have led to the perfection of a California Board of Medical Examiners application blank that, when fully completed, furnishes a searching survey of the applicant's personal history and professional credentials with recent photograph attached, all attested before a notary public. When seeking a license in California on the basis of a medical license issued in another state, the executive officer of said state board is required to make certification of his record. The college that granted the professional degree is also called upon for certification, and the applicant must file his diploma.

The necessity of this detailed procedure was made evident by the disclosures of the national diploma mill uncovered in 1923, which featured traffic in a large supply of fraudulent credentials, professional diplomas, licenses to practice in a very few states all relating to medicine, dentistry, pharmacy, chiropractic, naturopathy, divinity ordination certificates, university degrees, fraudulent certficates bearing the name of the State Superintendent of Public Instruction of at least two states, high school diplomas and credentials, etc.

Threatened in 1916 by legal action by the Board of Medical Examiners for questionable proceedings in the issuing of medical credentials, its attorney reported the corporation dissolved; however, a host of medical diplomas bearing the name of the Pacific Medical College were assertedly issued for a cash consideration as late as 1924, though dated in 1917, that is, one year after the corporation was dissolved.

* * *

The eclectic medical examining boards in three states were reported as granting licenses to graduates of these low-grade Missouri medical colleges. Unsuccessful attempts by writ of mandate were made to force the California Board of Medical Examiners to grant licenses to graduates of these discredited medical schools.

In 1923, the "racket" had become so comprehensive, with ramifications in foreign countries, that the bubble burst when a shrewd reporter on a St. Louis, Mo., paper went through the mill, purchased medical and chiropractic diplomas, and reported that for a cash consideration he was offered at least one state medical license.

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*** This article is by Charles S. Pinkham, Secretary of Board of Medical Examiners of the State of California, and is reprinted from the "United States Daily."**

So comprehensive had been the growth of the degrees-conferring visionary colleges that reports related under one roof in Washington, D. C., were listed fifty "educational institutions," and that in the city of Washington one group of men had incorporated 200 "colleges" and "universities."

Diploma mill investigations were waged actively in Arkansas, California, Connecticut, Delaware, Florida, Illinois, Massachusetts, Missouri, New York, Oklahoma, Pennsylvania and Texas.

Although thorough investigation disclosed but two instances where California licenses had been obtained by fraud, yet the odium attached to the prominence of Pacific Medical College credentials bartered by the national diploma mill, stirred the California board to renewed interest in strengthening our laws to cope with the purveyors and users of fraudulent professional credentials. In this fight for decent standards and to punish the offenders, the California board was opposed by astute attorneys, and had the funds of the medical board been limited, the battle would have been lost. Witnesses brought from Missouri and elsewhere testified to the purchase and sale of Pacific Medical College diplomas as well as transcripts showing an alleged course of medical study completed by the purchaser. The medical license of the president and owner of the Pacific Medical College was revoked. After four years consumed in the usual court procedures involved in cases on appeal, the higher court sustained the California board's revocation.

California's experience in attempting to penalize those who sell or attempt to use fraudulent credentials disclosed that our state law was deplorably weak.

* * *

Difficulties encountered in endeavoring to punish the diploma mill conspirators in California brought about the introduction by the California Board of Medical Examiners of what is termed the "diploma mill bill" passed by the legislature in 1927, now a law which makes illegal the use or sale of any fraudulent diploma, credentials, etc., in an attempt to secure from any of the licensing boards mentioned a license to practice the healing art. The penalty for violation of this statute is one to three years in the state prison or a fine of from $1000 to $3000, or by both such fine and imprisonment.

Two individuals have been convicted under this "diploma mill bill," and the publicity given these cases has served as a warning to others.

The effectiveness of a regulatory law such as the "diploma mill bill" depends on the interest of the administrative officer of the Board of Medical Examiners and his intuition born of years of experience in uncovering attempts to secure a medical license by fraud.

# CALIFORNIA MEDICAL LEGISLATION

### Regarding S. B. 175 (Fellom): The Bill to Permit Corporations to Practice Medicine for Profit

On pages 236-237 of the September 1931 number of CALIFORNIA AND WESTERN MEDICINE was printed the California Senate roll call on S. B. 175 (Fellom), which bill would have given corporations the right to practice medicine for profit in California. It was hoped that the information there given would suggest to the officers of county societies that letters of appreciation be sent from their respective county societies and/or members to the state senators who voted against S. B. 175 (Fellom) becoming a law.

The California Medical Association Committee on Public Policy and Legislation, through its chairman, Dr. Junius B. Harris, sent to each of the senators who voted against S. B. 175 (Fellom) the following letter:

My Dear Senator ——:

Under separate cover we are sending you a copy of the September issue of California and Western Medicine, the official publication of the California Medical Association, an organization of more than five thousand of the registered physicians and surgeons of California.

On page 236 of this issue under the caption "Medical Legislation," you will find some excerpts from the "Senate Daily Journal," giving the roll call on Senate Bill 175, which bill would have given corporations the right to practice medicine for profit.

It has occurred to us that you might be interested in the brief comments there made.

As you were one of the senators who voted against this bill, we wish you to know that we believe members of the county medical association from your own district, as well as members of the medical profession throughout California are deeply appreciative.

Yours very truly,

JUNIUS B. HARRIS, M. D.,
Chairman of the Committee on Public Policy and Legislation.

* * *

Among replies received from state senators who were so addressed are letters printed below. It is hoped that all county societies will write to their respective senators who voted against Senate Bill 175 (Fellom). Two of the reply letters follow:

November 3, 1931.

My Dear Doctor:

I received your very pleasant letter of October 31, also copy of the medical legislation, and am glad that my vote on the bill referred to was pleasing to you.

Very truly yours,

RALPH E. SWING.

* * *

Friend June:

Thanks very much for the magazine and for your kind favor of October 31.

Those of us in public life get so many brickbats an occasional bouquet is a wonderful help to our spirits. Seriously speaking, I was delighted to be of assistance and will be glad to coöperate with you at any time.

Very truly yours,

J. M. INMAN.

# TWENTY-FIVE YEARS AGO*

### EXCERPTS FROM OUR STATE MEDICAL JOURNAL

**Volume IV, No. 12, December 1906.**

*From some editorial notes:*

*The Gerino Decision.*—In view of the close resemblance of this decision to that handed down by the Supreme Court, already referred to as the case *ex parte* Gerino, it would seem to be not amiss to quote the salient portion of that now celebrated decision.

"It being proper for the legislature to demand some standard of efficiency, as we have seen, we think it equally within its powers to declare that it shall be the same as that required by an association composed of colleges devoted to the work of preparing persons for the profession. Evidently the standard of proficiency in scholarship as a preparation, and the particular studies necessary to secure a fair preparation, must change as the discoveries in natural science open new fields of investigation and suggest or reveal new curative agencies. The legislature cannot successfully prescribe in advance a standard to meet new and changing conditions. The method adopted appears to be sufficiently definite to enable all colleges to reach the required standard when in good faith they desire to do so. . . ."

*Other Plans.*—Other journals have attacked the American Medical Association, its *Journal* and the Council on Pharmacy; other journals will continue to do so, and in other ways. Be assured that the interests opposing this present movement to try and secure simple honesty in the making and marketing of remedies intended for physicians' use are very

* This column strives to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

numerous and very rich and, moreover, are in the habit of doing their work in "ways that are dark"; indeed, they naturally shun the light. For the first time in the history of this country, a considerable number of physicians have gotten together in the formation of medical societies and in supporting the American Medical Association. For the first time in our history it is possible for any considerable number of us to know what is being done and to participate in any particular kind of work or undertaking. So long as that condition remains, so long as the American Medical Association and our component state and county medical societies remain strong and active, the members taking an intelligent interest in what is going on for or against their best interests and those of their patients, just so long will the fight for decency, honesty, and truth be a successful fight. The hope of the man whose profit is in dishonesty, is that discord may be brought about. With a profession divided into warring units, he can succeed; with a profession united in harmonious societies, all working for the common good and the public benefit, he can do nothing—he is forced to be honest or quit. Let no innuendo blind you to the actual facts and the truth in this whole matter. . . .

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*From an article on "Diet in Disease" by George K. Abbott, M. D., Loma Linda.*

The wide difference of opinion, not only among the laity but also among the members of the medical profession, in regard to the natural and best dietary in health has given rise to so many theories and dietetic fads that it is not possible to come to any conclusion as to a proper dietary by the consideration of such. . . .

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*From an article on "Proprietary Medicines and Their Abuses" by George Dock, M. D., Ann Arbor, Michigan.*

Proprietary medicines are substances which someone has an exclusive right to make or sell for medicinal purposes. The exclusive right may depend on secret methods of manufacture, or on patent on the method of preparation, as in Germany, or on process and substance both, as in America, or on a copyright on the substance. . . .

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*From an article on "A Medical Library for San Francisco" by Douglass W. Montgomery, M. D.*

All who love medical literature and the advancement of medicine in this city wish to see the most made of the fine gift of the late Levi C. Lane's widow. That a combination of the County Medical Society's Library and the Lane Library would form a larger, finer foundation than either of them separately, there can be no doubt; but the start must be made properly or the combination will end in failure, and less will be gained than if such a coalition had never been attempted.

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# DEPARTMENT OF PUBLIC HEALTH

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*By* GILES S. PORTER, M. D.
*Director*

**Mortality in 1930.**—An analysis of deaths that occurred in California during 1930 reveals interesting data relative to the trend of mortality in some of the major causes. A total of 66,178 deaths were registered in this state last year. Of these deaths, 16,176 or almost 25 per cent were due to diseases of the circulatory system; more than 15 per cent of all deaths, 7195, were due to cancer and 6394 were due to diseases of the nervous system. Last year, for the first time, deaths from diseases of the nervous system exceeded deaths from tuberculosis in California, of which there were 5629 recorded. More than half of all deaths (53.5 per cent) were due to the four causes mentioned above—diseases of the circulatory system, cancer, diseases of the nervous system and tuberculosis.

Diseases of the respiratory system claimed 4895 lives, and deaths from nephritis totaled 4813. There were 4460 deaths from diseases of the digestive system and deaths from external causes exclusive of automobile deaths, totaled 3169. Epidemic diseases caused 2793 deaths, and deaths from other general diseases totaled 2655. There were 2573 deaths from early infancy and malformations, and 2356 automobile deaths. There were 1509 suicides. Deaths from non-venereal genito-urinary causes were 914; the total number of deaths from puerperal causes reached 443. Deaths from senility were only 204.

The increasing number of deaths from cancer and diseases of the nervous system provides interesting material for study. The number of deaths from these two causes totaled 13,589, as compared with 16,176 deaths from diseases of the circulatory system. It would appear that there may be a possibility of these two causes, together, eventually displacing the lead which deaths from diseases of the circulatory system have always maintained. The decreasing number of deaths from tuberculosis is conspicuous. The total deaths from this cause in 1930 constituted but 8.5 per cent of the total number of deaths from all causes.

The increasing number of automobile deaths is receiving a great deal of attention. It is interesting to note that more than 40 per cent of all deaths from external causes last year were due to automobile deaths. Deaths in the industries do not occur as frequently as they did in former years, and it would appear that automobile deaths may soon constitute the major portion of all deaths from external causes. The relatively few number of deaths from epidemic diseases, 2793, indicates that efforts exerted in their control have not been in vain. The large number of deaths from suicides constitutes a problem for sociologists and mental hygienists. The increasing number of suicides each year indicates that there may be need for the application of some remedy, undiscovered as yet, to prevent the increase in the number of deaths from this cause.

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**Typhoid Fever Reported.**—A considerable number of cases of typhoid fever, contracted through drinking water from contaminated streams, have been reported in California this summer. A special investigation within the river area of Sacramento County revealed the fact that twenty-six persons who had contracted typhoid fever had been drinking raw river water or had been swimming in the Sacramento or American rivers.

Along the San Lorenzo River in Santa Cruz County ten cases of typhoid fever have been reported during the summer months. The exact source of infection has not been determined, but it is probable that swimming in the polluted San Lorenzo River is responsible for the infection.

Discharge of sewage from the Boulder Creek district into the San Lorenzo River has been discontinued. Sewage in the future will be disposed of on the premises of each individual owner by means of septic tanks or cesspools. In making this change 101 septic tanks and cesspools have been provided. Practically all improvements with reference to sewage disposal on premises situated adjacent to the San Lorenzo River and its tributaries have been completed. The citizens of Brookdale are now making arrangements to install a new sewer system under the State Act.

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**Cold Storage Investigation.**—During the past month an investigation was undertaken to determine how the Cold Storage Act is being observed with respect to the requirement that persons owning articles of food in storage for one year must have a permit from the State Department of Public Health in order to obtain an extension of the storage period. The investigation

revealed the fact that considerable amounts of foodstuffs had been in storage for twelve months. Correspondence with the owners of the products has resulted in compliance with the regulation pertaining to obtaining permits for the extension of the storage periods.

At the end of the quarter, June 30, 1931, there were held in cold storage in California warehouses nearly ten million pounds of fresh fruit; more than six million pounds of vegetables; nearly six million pounds of meat; three and one-fourth million pounds of poultry; nearly four million pounds of dried, frozen and preserved fruit; two million pounds of fish; nearly one and one-half million pounds of citrus fruits; two and three-fourths million pounds of cheese; two and three-fourths million pounds of butter; six and three-fourths million pounds of eggmeat; and one and one-fourth million cases of eggs.

# BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA

*By* CHARLES B. PINKHAM, M. D.
*Secretary*

### Special Notice—In Re Narcotic Prescriptions

Again we urge licentiates to read carefully the pink narcotic warning insert page in each directory published annually by the Board of Medical Examiners, a copy of which is sent to each licentiate. Recently two licentiates in northern California have illegally prescribed large quantities of morphin for an addict based solely on his claim of disability unconfirmed by a physical examination. Reports tell of a woman recently operating in northern California who appears in a physician's office with a small boy in need of a tonsillectomy. Arrangements are made for operation, she then relates her blind father is suffering from angina pectoris, and several doctors have illegally given her a prescription for narcotics to relieve the mythical father.

Reports relate that an alleged narcotic addict recently obtained from a Vallejo physician, over a period of thirteen months, 3475 grains of morphin. This addict is visiting physicians, and presents a statement certifying that he is suffering from cancer of the stomach, diagnosis confirmed by x-ray examination at the San Francisco Hospital followed by two operations, also treatment at the Southern Pacific Hospital, San Francisco. However, the claims of malignancy or cancer in any form are unsubstantiated by the hospital records. This individual admitted that he is a narcotic addict, and, according to his own statement, he has been supplying his wife and two of his brothers, all of whom are addicts.

***Don't be fooled by stories of transient individuals seeking narcotics.***

***Don't prescribe narcotics based on presentation of a letter referring to alleged infirmities, which may be forged.***

***Don't prescribe for addiction unless the individual is under treatment in an institution.***

***Don't heed a plea for a small supply of morphin to help out until an asserted near-by destination can be reached.***

### News Items, December 1931

"Dr. P. T. Phillips of Santa Cruz today was elected to his fifteenth consecutive term as president of the State Board of Medical Examiners. At the same time Dr. Charles B. Pinkham, San Francisco, was named to serve his nineteenth term as secretary. Dr. Harry V. Brown, Glendale, was elected vice-president to succeed Dr. William Molony, Los Angeles, whose term has expired" (Sacramento *Bee*, October 20, 1931).

On September 5, 1929, the articles of incorporation of the "Cale College of Chiropractic," Los Angeles, were amended, making its name the "Southern California College of Chiropractic." On October 6, 1931, the articles were further amended, changing its name to the "College of Chiropractic Physicians and Surgeons." A recent opinion rendered by the Attorney General to the Board of Chiropractic Examiners holds that graduates of this institution should be admitted to examination provided they actually teach chiropractic and meet the schedule of minimum educational requirements set forth in Section 5 of the Chiropractic Initiative, and it is further recommended that the Board of Chiropractic Examiners, when licensing a graduate of any institution having this or a similar name, expressly advise such licensee that his license only authorizes him to practice chiropractic, and does not authorize him to practice as a physician or (and) surgeon.

The "Za Alchemists Herbalist College," Los Angeles, has been added to the list of corporations issuing diplomas in this state. Their diploma relates that it has been issued after the completion of "the full course of instructions in herbal histology, physiology, plant affinity, the ancient religious shepherds' mystic secret doctrine," and the holder "is deemed by us fully qualified in this beneficent therapy."

The eyesight swindlers are again operating in California, according to a report made by Mrs. J. M. Monroe, Westminster, Orange County, who relates that an individual giving the name of Dr. L. Eldridge, claiming to be from the "St. Francis Clinic, 1411 South Spring Street, Los Angeles" (although Spring Street ends at Ninth), recently mulcted her out of a small sum of money by the old radium drop method described in the pamphlet "Eyesight Swindlers" published by the secretary of the Board of Medical Examiners. Mrs. Monroe is reported to have instantly identified from said pamphlet the picture of Simon Mohr as the individual who posed as Dr. L. Eldridge.

"The license of Dr. George Gillespie, San Francisco chiropractor convicted of second degree murder last June as a result of a fatal illegal operation, today had been revoked by the State Board of Medical Examiners" (San Francisco *Call-Bulletin*, October 21, 1931). Both the drugless practitioner certificate and the certificate to practice chiropody held by Doctor Gillespie were revoked.

Reports relate that Guy N. E. Grosse, licensed chiropractor on October 1, 1931, pleaded guilty in the Justice Court of Santa Cruz to violation of the Medical Practice Act, judgment being suspended on condition that he no further violate the law.

Reports relate that the Appellate Division of the Superior Court in San Francisco recently affirmed the verdict of the Municipal Court of that city which fined Arthur J. Green $100 on a charge of violation of the Medical Practice Act.

Reports relate that A. E. Harland in the Municipal Court of the City of Los Angeles pleaded guilty on October 13, 1931, to a charge of violating the Medical Practice Act and was sentenced to pay a fine of $100 or serve ten days in the city jail, sentence being suspended on condition that he no longer violate the provisions of the Medical Practice Act.

"Carl C. Lee, Chinese herb specialist, today appealed his conviction in Justice Court on a charge of practicing medicine without a license to the Superior Court. The notice of appeal was made by Attorney

Clifford Russell after Justice of the Peace H. P. Andrews had denied Lee a new trial and sentenced the Chinese to pay a fine of $175 or serve sixty days in the city jail. In passing sentence, Judge Andrews said he would be lenient and not impose the jail sentence because it was Lee's first offense. Lee was convicted by a jury" (Sacramento *Bee*, October 29, 1931).

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Reports relate that J. E. Machado, Oxnard druggist who advertised himself as a healer and curer of diseases, on October 27, 1931, in Justice Court, Santa Paula, was found guilty of violation of the Medical Practice Act and sentenced to pay a fine of $100 or serve fifty days in the city jail. Sentence was suspended on his promise to discontinue violation of the law.

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Convicted of alleged illegal practices, Dr. Woodward B. Mayo of Los Angeles was today forbidden to practice in California by the State Board of Medical Examiners, according to press dispatches from Sacramento" . . . (Los Angeles *Express*, October 22, 1931).

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The license of Denwood N. L. Newbury, M. D., was revoked by the Board of Medical Examiners, October 20, 1931, following a hearing on a charge of alleged narcotic addiction.

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Reports relate that an individual calling himself Doctor Osmun and alleging his connection with a San Diego laboratory and a Hollywood laboratory is alleged to be soliciting licentiates offering an attractive insurance scheme. Claiming to represent leading insurance companies, he is reported to be collecting a small sum of money in advance to pay for postage necessary to send the doctor's name to the insurance company. He is described as "rather heavy set, five feet 9 inches tall, somewhat prominent teeth, heavy jaw, sunburned face" with "an enthusiastic effusive manner . . . had a sheriff's license or badge in his pocket and said he was sworn in as an officer and could arrest anyone though he had never done so. . . ."

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Reports relate that Helen Parkinson on October 14, 1931, pleaded guilty in the Justice Court, Santa Barbara, to a charge of violation of the Medical Practice Act, and was sentenced to pay a fine of $200, fine being suspended on condition that she do not further violate the Medical Practice Act.

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Paul Pretzell, who, according to reports, was on November 25, 1930, sentenced at Santa Ana to serve six months in the county jail on a charge of violation of the Medical Practice Act, was recently reported to again be violating the Medical Practice Act in San Francisco; however, he left for Seattle before he could be apprehended.

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The records show that on November 4, 1931, in the Municipal Court of Los Angeles, John T. Richter was sentenced to pay a fine of $200 or serve twenty days in the city jail on a charge of violation of the Medical Practice Act, "sentence being suspended on condition that he not use the prefix 'Dr.' or otherwise violate the Medical Practice Act."

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"Charges of burglary and forgery pending against Dr. Eugene Settles will be dismissed, it was announced at the District Attorney's office yesterday after Judge C. N. Andrews, on recommendation of Dr. H. F. Andrews, had committed the physician to Patton State Hospital for the Insane. Settles had been found to be addicted to the use of drugs" (San Diego *Union*, October 2, 1931). On October 20, 1931, the medical license of Eugene Lee Settles, M. D., was revoked based upon charges of narcotic addiction.

Reports show that Tom Hin Kong, Chinese herbalist, on October 29, 1931, pleaded guilty in the Justice Court of Sacramento to a charge of violation of the Medical Practice Act, and paid a fine of $125.

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The records show that on October 16, 1931, Ruby Warmick, in the Redondo Justice Court, pleaded guilty to a violation of the Medical Practice Act and was sentenced to pay a fine of $300 or serve sixty days in the county jail; sentence suspended, and she was placed on probation for a period of six months.

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An impostor using the name of Dr. Harold D. Warnock, alias Dr. Archibald Warnock, is reported sought by the police on a charge of passing a fictitious check for $75 on a Sacramento hotel.

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On October 13, 1931, W. G. Weir pleaded guilty in the Municipal Court of Los Angeles to a charge of violation of the Medical Practice Act, and was sentenced to pay a fine of $100 or serve ten days in the city jail, sentence being suspended.

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C. M. Weston, Huntington Park, California, is reported to have pleaded guilty on October 15, 1931, to violation of the Medical Practice Act, and sentenced to sixty days in jail, sentence being suspended on condition that he do not again violate the Medical Practice Act.

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*Limitation of Title of Specialist.*—An amendment to the Medical Act forbids any physician from holding himself out as a specialist or advertising himself as such unless and until he has received a specialist's certificate from the University of Alberta. The question has naturally arisen, would a physician who restricted his practice to any branch of the healing art and so advised the public through a card in the press or by such notice on his office door be thus violating the Act, unless he has a certificate from the university? This matter has been clarified by the university on the advice of a competent legal authority as follows: "A specialist in the practice of the regular medical profession is one who has made a special study of a group of diseases for such time and in such manner as defined by the Senate of the University, and who holds a certificate and is actively engaged in the practice of his specialty. Anyone who holds himself out to the public in the Province of Alberta as limiting his practice to any group of diseases is to be regarded as holding himself out to the public as a specialist, and is not qualified for the practice of that specialty until such person has received the diploma of the Senate of the University. Any representation which directly or indirectly conveys to the public the impression that a practitioner is so qualified, unless he holds the certificate of the Senate of the University of Alberta, should be regarded as an infringement of the Medical Act."—*Canad. M. A. J.*, September, 1931. (See, also, page 474 in this issue of CALIFORNIA AND WESTERN MEDICINE.)

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*Noise a Misdemeanor in England.*—In England the law makes it a misdemeanor to annoy residents by unnecessary noise. Perhaps it is too much to expect any action along this line here in the United States, for we have less respect for law than they have in England, but it would be a blessing to sick and well if we could suppress unnecessary noise, and we have in mind the fiend who has his radio or phonograph near an open window and insists upon keeping his neighbors disturbed at hours when decent people are asleep, and the automobile drivers who take a special delight in running with the exhaust open and tooting the horn viciously at all hours after midnight.—Editorial, *Indiana Medical Association Journal*, September 1930.

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# VACCINE THERAPY in RESPIRATORY INFECTIONS

as reported by *Roy P. Forbes,* of the Department of Pediatrics, Medical School, University of Colorado—*Archives of Pediatrics—January, February, March, April, 1931.*

A review of the literature since 1918 shows a preponderance of articles favorable to the use of respiratory vaccine as a prophylactic—21 favorable as against 2 unfavorable reports.

On its use, therapeutically, there have been (including Forbes') 8 favorable and one unfavorable reports since 1926. Previous to this date the majority of reports were unfavorable.

**TABULATION OF FORBES' CASES*

| DIAGNOSIS | No. of Cases | % Good Results | % Fair Results | % Poor Results |
|---|---|---|---|---|
| Influenza | 67 | 62.8 | 29.8 | 7.4 |
| Acute Rhinopharyngitis | 39 | 60.0 | 20.0 | 20.0 |
| Sub-acute Rhinopharyngitis | 13 | 92.4 | 7.6 | ..... |
| Acute Laryngitis | 27 | 55.6 | 40.7 | 3.7 |
| Acute Bronchitis | 60 | 80.7 | 18.3 | 2.9 |
| Sub-acute Bronchitis | 8 | 75.0 | 12.5 | 12.5 |
| Asthmatic Bronchitis | 18 | 55.5 | 22.25 | 22.25 |
| TOTAL | 232 | 68.86 | 21.58 | 9.81 |

| | | | |
|---|---|---|---|
| Pneumonia, all cases | Vaccine | 76 cases | 9 deaths |
| | Controls | 66 cases | 18 deaths |
| All cases treated within 48 hours of onset | Vaccine | 23 cases | 1 death |
| | Controls | 40 cases | 6 deaths |

THE CUTTER LABORATORY,
Berkeley, California.

Gentlemen: Please mail reprint of Forbes' article.

Name .....

Address .....

City ..... State .....

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